- ○ **Artificial Turf Coronado**

Landscapings New Era: The Rise of Synthetic Turf in San Diego

When it pertains to selecting the best artificial turf in San Diego, comprehending the different kinds readily available is of critical value. The Growing Trend of Artificial Grass Among San Diego Residents . Artificial turf, a preferred choice for lawns, sports fields, and golf links, is designed to resemble the feel and look of all-natural lawn while offering a more durable and low-maintenance option. Nonetheless, not all artificial turfs are produced equivalent. There are a number of kinds to pick from, each with their unique attributes and benefits.

One of one of the most typical types of artificial turf is nylon. Nylon lawn is understood for its toughness and strength. It can stand up to heavy weight and heats without losing its original form. This makes it optimal for areas with high foot web traffic or under extreme use. However, as a result of its durability, nylon grass often tends to be much more expensive than various other kinds.

Polyethylene grass is another prominent option. It closely resembles all-natural lawn in terms of shade, texture, and feel. Its soft and comfortable underfoot, making it a wonderful selection for homeowners that want a lavish, eco-friendly yard without the maintenance.

Landscapings New Era: The Rise of Synthetic Turf in San Diego – Drought-tolerant landscaping San Diego

1. Artificial lawn Del Mar
2. Custom turf solutions in San Diego
3. Artificial Turf National City

Plus, its normally more cost effective than nylon.

Polypropylene grass is the least pricey choice.

Landscapings New Era: The Rise of Synthetic Turf in San Diego – Artificial Turf Carlsbad

1. San Diego turf for kids play areas
2. Artificial Turf Pacific Beach
3. Landscaping with turf and rocks

While its still a viable selection for low-traffic areas, it doesn't offer the very same resilience as nylon or polyethylene. This kind of turf can easily end up being matted or harmed under heavy usage, so its best for attractive usage or light household applications.

Beyond the material, its additionally important to consider the pile elevation (the size of the grass blades) and thickness (just how closely the blades are compacted). A higher pile and denser lawn will really feel extra lavish underfoot, however it will certainly additionally be much more pricey. Reduced pile heights are normally extra sturdy and much easier to preserve.

When choosing the most effective synthetic grass in San Diego, consider the locations environment too. San Diego is recognized for its warm, sunny climate, so UV-resistant turf that wont discolor in the sun is a must. In addition, if the area sees a great deal of rain, choose turf with good drain to prevent waterlogging.

In conclusion, selecting the best artificial turf in San Diego suggests comprehending the various types offered and considering aspects like durability, comfort, cost, and regional environment. By taking these into account, you can find the excellent artificial turf to meet your specific demands.

Variables to Take Into Consideration when Choosing Artificial Turf in San Diego

When selecting synthetic grass in San Diego, there are several critical factors to take into consideration. This choice can be quite overwhelming as a result of the countless alternatives available in the marketplace. However, being educated regarding the required considerations can help pick the best artificial turf that matches your requirements.

First of all, the objective of the grass is essential. Are you trying to find synthetic grass for your home lawn, a playground, or a sporting field? Various usages need different sorts of artificial turf. For instance, if you want turf for a playground, take into consideration one that can endure heavy foot traffic and is soft enough to avoid injuries during drops.

The high quality of the artificial turf is one more vital aspect. High-quality grass typically has a soft, non-abrasive appearance, and is designed to resemble natural turf. On the other hand, reduced quality options might feel harsh to the touch and have a visibly phony appearance. For that reason, its a good idea to literally really feel and contrast various samples prior to choosing.

Resilience is additionally crucial when selecting artificial turf in San Diego. Take into consideration how much website traffic the grass will receive. If you have animals or children who will be using the turf consistently, you will certainly require a long lasting, high-traffic lawn.

Furthermore, the lawns upkeep needs must be considered. Some synthetic grass alternatives require even more upkeep than others. For example, some may require normal brushing to keep the blades upright. Others might need infill to be included occasionally to assist the grass keep its lush look.

Furthermore, the expense is a significant consideration. The cost of synthetic grass can differ widely based upon its high quality, sturdiness, and the brand. When considering price, its vital to consider not simply the ahead of time expense of the grass and installation, however likewise lasting upkeep prices.

Finally, take into consideration the grass appearance. Artificial turf can be found in numerous tones of environment-friendly and various blade sizes. Choose a style that matches your visual choice and the look you want to accomplish for your landscape.

In conclusion, a number of elements should be taken into consideration when selecting synthetic grass in San Diego. By paying attention to the turfs function, quality, sturdiness, upkeep requirements, price, and appearance, you can select the very best synthetic grass that fits your specific requirements and preferences.

Where to Acquire High Quality Artificial Turf in San Diego

Picking the very best artificial turf for your San Diego home or company can be a daunting task.

Landscapings New Era: The Rise of Synthetic Turf in San Diego – Artificial Turf Coronado

1. Artificial Turf Coronado
2. Drought-tolerant landscaping San Diego
3. Artificial Turf Carlsbad

With numerous alternatives offered, its essential to recognize where to get top quality artificial turf in San Diego. This guide will certainly supply you with the necessary details to aid you make a knowledgeable decision.

The first step in buying top quality artificial turf is locating trusted suppliers. In San Diego, there are numerous premier distributors known for their variety of items and superb customer support. These include Artificial Grass Liquidators, Turf Manufacturing Facility Direct, and Acquisition Eco-friendly Artificial Yard. These suppliers supply top quality artificial turf that imitates the look and feel of natural yard, making it an excellent choice for homes, companies, and sporting activities centers.

Man-made Yard Liquidators in San Diego is a top choice for many due to its large range of budget friendly choices. They offer both domestic and commercial grade synthetic grass items that are environmentally friendly and safe for children and pets.

Lawn Factory Straight, on the various other hand, is recognized for its top quality and cost. They resource their synthetic grass directly from the maker, guaranteeing that clients get the most effective quality product at the most affordable possible cost. They additionally use a variety of designs and shades, enabling customers to personalize their artificial turf to fit their specific requirements and choices.

Acquisition Environment-friendly Artificial Grass in San Diego is another fantastic choice. They give environmentally friendly and pet-friendly man-made lawn options that are created to withstand the rough San Diego climate. Their products are additionally made to be low upkeep, making them a superb selection for active house owners and business owners.

When selecting artificial turf, its crucial to consider aspects such as longevity, maintenance, visual appeals, and price. Quality synthetic grass ought to be sturdy sufficient to endure hefty foot web traffic and rough climate condition. It needs to also be reduced maintenance, calling for very little watering and no mowing. In regards to looks, choose synthetic grass that closely appears like natural yard in shade and appearance. Finally, consider the expense. While quality synthetic grass may be more expensive upfront, it can save you cash in the long run because of its toughness and low maintenance demands.

To conclude, if youre asking yourself where to buy high quality artificial turf in San Diego, think about providers like Artificial Yard Liquidators, Grass Factory Direct, and Purchase Environment-friendly Artificial Yard. These providers offer high-grade products at competitive prices, making them an excellent selection for property owners and local business owner alike. By considering aspects such as toughness, maintenance, looks, and expense, you can choose the most effective synthetic grass for your demands.

Maintenance Tips for Your Chosen Artificial Turf

Artificial turf has actually become a preferred choice for many homeowners in San Diego, and for an excellent reason. Its long lasting, it needs much less upkeep than natural yard, and it stays environment-friendly throughout the year. However, even the most effective synthetic grass needs some maintenance to maintain it in top problem. Below are some suggestions to assist you maintain your selected synthetic grass looking its finest.

1.

Routinely Brush and Rinse: Make use of a rigid brush to keep the blades of your synthetic grass standing up and looking all-natural. Remember to clean in the opposite direction of the blades. Wash your lawn on a regular basis to get rid of dirt, dust, and plant pollen. This will certainly not just keep it clean yet additionally assist to avoid any type of buildup that might harm the fibers.

2. Take Care Of Spills Instantly: If you spill anything on your turf, its essential to cleanse it up today. Many spills can be rinsed away with water. If you have a stubborn stain, you can make use of a mild detergent combined with warm water. Do not make use of rough chemicals as they can harm the fibers of the grass.

3. Get Rid Of Debris: Get rid of leaves, branches, and other particles from your grass frequently. This will certainly aid prevent the development of mold and mildew and mold. You can use a leaf blower or a plastic rake to do this. Do not make use of a steel rake as it can damage the turf.

4. Shield from Warm: While artificial turf is made to stand up to the components, it can be damaged by extreme heat. If you have outdoor furniture or various other products on your lawn, move them around periodically to prevent warm buildup. If youre intending a barbecue or fire pit, guarantee its far away from your grass to stay clear of any prospective damage.

5. Normal Assessments: Constantly examine your lawn for any kind of indications of damages. If you observe any kind of loosened seams, level places, or various other

problems, obtain them fixed asap. This will certainly prevent tiny troubles from coming to be huge ones.

6. Specialist Upkeep: While regular house owner maintenance is vital, its also an excellent concept to have your lawn skillfully kept at least yearly. An expert can deep cleanse your grass and resolve any prospective problems you may not have discovered.

To conclude, picking the most effective artificial turf in San Diego includes not just selecting the ideal item but additionally understanding just how to maintain it correctly. With these ideas, you can keep your synthetic grass looking fresh, lush, and green for many years to find.

About San Diego

This article is about the city in California. For other uses, see San Diego (disambiguation).

San Diego is located in the United States

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San Diego
San Diego

Location within the United
States
San Diego is located in North America

San Diego

San Diego

San Diego (North America)

San Diego

City

Downtown San Diego skyline

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Downtown San Diego skyline

La Jolla Shores

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La Jolla

Mission San Dieg

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Mission San

Diego de Alcalá

California To

Image not found or

California

Tower at

Balboa

Park

El Cortez

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El Cortez

Balboa The

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Balboa

Theatre

Flag of San Diego

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Flag

Official seal of San Diego

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Seal

Official logo of San Diego

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Logo

Nicknames:

"America's Finest City",[1] "Birthplace of California", "City in Motion"[2]

Motto:

Semper Vigilans (Latin for 'Always Vigilant')[3]

Location of San Diego in San Diego County, California

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Location of San Diego in San Diego County, California

San Diego is located in California

San Diego

Location within California

Coordinates: 32°42'54"N 117°09'45"Wﬁ»¿ / ﬁ»¿32.71500°N 117.16250°WCountry United StatesState California County San Diego EstablishedJuly 16, 1769; 255 years ago IncorporatedMarch 27, 1850[4]Named afterSaint Didacus of AlcaláGovernment

· TypeMayor–council[5] · BodySan Diego City Council · MayorTodd Gloria (D) · City AttorneyHeather Ferbert (D)[6] · City Council[7]

List

· State Assembly Members

List

· Carl DeMaio

R–75th District

· Darshana Patel

D–76th District

· Tasha Boerner

D–77th District

· Chris Ward

D–78th District

- LaShae Sharp–Collins

D–79th District

- David Alvarez

D–80th District

- State Senators

List

- Steve Padilla

D–18th District

- Catherine Blakespear

D–38th District

- Akilah Weber

D–39th District

- Brian Jones

R–40th District

Area

[8]
- Total

372.42 sq mi (964.56 km^2) · Land325.88 sq mi (844.02 km^2) · Water46.54 sq mi (120.54 km^2) 12.68%Highest elevation

[9] (Cowles Mountain)

1,591 ft (485 m)Lowest elevation

(Pacific Ocean)

0 ft (0 m)Population

(2020)[10]
- Total

1,386,932

- Estimate

(2024)[11]

1,404,452 · Rank 20th in North America
8th in the United States
2nd in California · Density 4,255.96/sq mi (1,643.25/km^2) · Urban

[12]

3,070,300 (US: 15th) · Urban density 4,550.5/sq mi (1,756.9/km^2) · Metro

[13]

3,276,208 (US: 18th) Demonym San Diegan GDP

[14]

 · San Diego (MSA) $295.6 billion (2022) Time zone UTC−08:00 (PST) · Summer (DST) UTC−07:00 (PDT) ZIP Codes [15]

92101–92124, 92126–92132, 92134–92140, 92142–92143, 92145, 92147, 92149–92150, 92152–92155, 92158–92161, 92163, 92165–92179, 92182, 92186–92187, 92191–92193, 92195–92199

Area codes 619/858 FIPS code 06–66000 GNIS feature IDs 1661377, 2411782 Website www.sandiego.gov

San Diego (/ˌsæn diˈeɪɡoʊ/ ⓘ SAN dee-AY-goh, Spanish: [san ˈdjeɣo]) is a city on the Pacific coast of Southern California, adjacent to the Mexico–United States border. With a population of over 1.3 million, it is the eighth-most populous city in the United States and the second-most populous in the state of California. San Diego is the seat of San Diego County, which has a population of nearly 3.3 million.[17] It is known for its mild year-round Mediterranean climate, extensive beaches and parks, long association with the United States Navy, and recent emergence as a healthcare and biotechnology development center.

Historically home to the Kumeyaay people, San Diego has been referred to as the *Birthplace of California*, as it was the first site visited and settled by Europeans on what is now the West Coast of the United States.[18] Upon landing in San Diego Bay in 1542, Juan Rodríguez Cabrillo claimed the area for Spain, forming the basis for the settlement

of [Alta California](#), 200 years later. The [Presidio](#) and [Mission San Diego de Alcalá](#), founded in 1769, formed the first European settlement in what is now California. In 1821, San Diego became part of the newly declared [Mexican Empire](#), which reformed as the [First Mexican Republic](#) two years later. California was [ceded to the U.S.](#) in 1848 following the [Mexican–American War](#) and was [admitted as the 31st state](#) in 1850.

The largest sectors of the [economy of San Diego](#) include military and defense-related activities, tourism, international trade, research, and manufacturing. The city is home to several universities, including [UC San Diego](#), [San Diego State University](#), and the [University of San Diego](#). San Diego is the economic center of the [San Diego–Tijuana](#) region, the second-most populous [transborder metropolitan area](#) in the Western Hemisphere, home to an estimated five million people as of 2022.[19] The primary border crossing between San Diego and [Tijuana](#), the [San Ysidro Port of Entry](#), is the busiest international land border crossing in the world outside of Asia ([fourth-busiest](#) overall). [San Diego International Airport](#) (SAN) is the busiest single-runway airport in the United States.[20]

Name

[[edit](#)]

San Diego's name can be traced back to the 17th century when Spanish explorer [Sebastián Vizcaíno](#) bestowed it upon the area in 1602. He named the bay and the surrounding area "San Diego de Alcalá" in honor of [Saint Didacus of Alcalá](#).[21]

Prior to the Spanish establishment of San Diego, the [Kumeyaay](#) town was called [Kosa'aay](#), meaning "drying out place" in the [Kumeyaay language](#).[22] After the establishment of San Diego, the Kumeyaay called town and city *Tepacul Watai*, meaning "Stacked Big".[23] [Luiseño](#) speakers in the [North County region](#) called it *Pushuyi*.[24]

History

[[edit](#)]

See also: [History of San Diego](#)

For a chronological guide, see [Timeline of San Diego](#).

Pre-colonial period

Full length portrait of a man in his thirties wearing a long robe, woman and child visible be

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The Kumeyaay, referred to by the Spanish as *Diegueños*, have inhabited the area for thousands of years.

What has been referred to as the San Dieguito complex was established in the area at least 9,000 years ago.[25] The Kumeyaay may have culturally evolved from this complex or migrated into the area around 1000 C.E.[26] Archaeologist Malcolm Rogers hypothesized that the early cultures of San Diego were separate from the Kumeyaay, but this claim is disputed.[27] Rogers later reevaluated his claims, yet they were influential in shaping historical tellings of early San Diego history.[27]

The Kumeyaay established villages scattered across the region, including the village of Kosa'aay which was the Kumeyaay village that the future settlement of San Diego would stem from in today's Old Town.[22][28] The village of Kosa'aay was made up of thirty to forty families living in pyramid-shaped housing structures and was supported by a freshwater spring from the hillsides.[22]
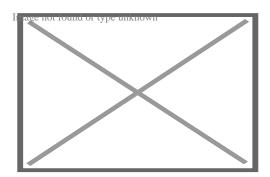
Spanish period

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Portuguese explorer Juan Rodríguez Cabrillo landing in San Diego Bay in 1542, claiming California for the Spanish Empire

The first European to visit the region was explorer Juan Rodríguez Cabrillo. Sailing his flagship *San Salvador* from Navidad, New Spain, Cabrillo claimed the bay for the Spanish Empire in 1542, and named the site "San Miguel".[29] In November 1602, Sebastián Vizcaíno surveyed the harbor and what are now Mission Bay and Point Loma and named the area for the Catholic Saint Didacus, a Spaniard more commonly known as *San Diego de Alcalá*.[21]

The permanent European colonization of both California and San Diego began in 1769 with the arrival of four contingents of Spaniards from New Spain and the Baja California peninsula. Two seaborne parties reached San Diego Bay: the *San Carlos*, under Vicente Vila and including as notable members the engineer and cartographer Miguel Costansó and the soldier and future governor Pedro Fages, and the *San Antonio*, under Juan Pérez. An initial overland expedition to San Diego from the south was led by the soldier Fernando Rivera and included the Franciscan missionary, explorer, and chronicler Juan Crespí, followed by a second party led by the designated governor Gaspar de Portolá and including the mission president Junípero Serra.[30]
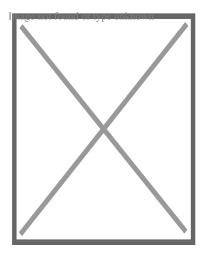

Mission San Diego de Alcalá was founded in 1769 by Saint Junípero Serra, making it the oldest of the Spanish missions in California.

In May 1769, Portolà established the Presidio of San Diego on a hill near the San Diego River above the Kumeyaay village of Cosoy,[22] which would later become incorporated into the Spanish settlement,[28] making it the first settlement by Europeans in what is now the state of California. In July of the same year, Mission San Diego de Alcalá was founded by Franciscan friars under Serra.[31][32] The mission became a site for a Kumeyaay revolt in 1775, which forced the mission to relocate six miles (10 km) up the San Diego River.[33] By 1797, the mission boasted the largest native population in Alta California, with over 1,400 neophytes living in and around the mission

proper.[34] Mission San Diego was the southern anchor in Alta California of the historic mission trail El Camino Real. Both the Presidio and the Mission are National Historic Landmarks.[35][36]
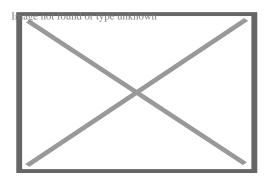
Mexican period

[edit]

José María Estudillo served as commandant of the Presidio of San Diego and founded the Estudillo family, a powerful clan of Californios.

In 1821, Mexico won its independence from Spain, and San Diego became part of the Mexican territory of Alta California. In 1822, Mexico began its attempt to extend its authority over the coastal territory of Alta California. The fort on Presidio Hill was gradually abandoned, while the town of San Diego grew up on the level land below Presidio Hill. The Mission was secularized by the Mexican government in 1834, and most of the Mission lands were granted to former soldiers. The 432 residents of the town petitioned the governor to form a pueblo, and Juan María Osuna was elected the first alcalde ("municipal magistrate"). Beyond the town, Mexican land grants expanded the number of California ranchos that modestly added to the local economy.
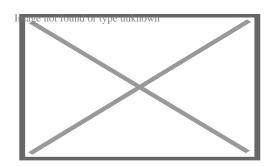
However, San Diego had been losing population throughout the 1830s, due to increasing tension between the settlers and the indigenous Kumeyaay and in 1838 the town lost its pueblo status because its size dropped to an estimated 100 to 150 residents.[37] The ranchos in the San Diego region faced Kumeyaay raids in the late 1830s and the town itself faced raids in the 1840s.[38]

Americans gained an increased awareness of California, and its commercial possibilities, from the writings of two countrymen involved in the often officially forbidden, to foreigners, but economically significant hide and tallow trade, where San Diego was a major port and the only one with an adequate harbor: William Shaler's "Journal of a Voyage Between China and the North-Western Coast of America, Made in 1804" and Richard Henry Dana's more substantial and convincing account, of his 1834–36 voyage, *Two Years Before the Mast*.[39]

Casa de Estudillo, built 1827, is one of San Diego's oldest buildings and served as inspiration for Helen Hunt Jackson's 1884 novel *Ramona*.

In 1846, the United States went to war against Mexico and sent a naval and land expedition to conquer Alta California. At first, they had an easy time of it, capturing the major ports including San Diego, but the Californios in southern Alta California struck back. Following the successful revolt in Los Angeles, the American garrison at San Diego was driven out without firing a shot in early October 1846. Mexican partisans held San Diego for three weeks until October 24, 1846, when the Americans recaptured it. For the next several months the Americans were blockaded inside the pueblo. Skirmishes occurred daily and snipers shot into the town every night. The Californios drove cattle away from the pueblo hoping to starve the Americans and their Californio supporters out. On December 1, the American garrison learned that the dragoons of General Stephen W. Kearney were at Warner's Ranch. Commodore Robert F. Stockton sent a mounted force of fifty under Captain Archibald Gillespie to march north to meet him. Their joint command of 150 men, returning to San Diego, encountered about 93 Californios under Andrés Pico.
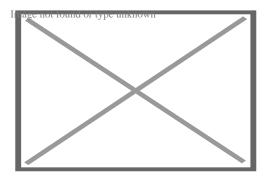
The 1846 Battle of San Pasqual was a decisive battle between American and Californio forces.

In the ensuing Battle of San Pasqual, fought in the San Pasqual Valley which is now part of the city of San Diego, the Americans suffered their worst losses in the campaign. Subsequently, a column led by Lieutenant Gray arrived from San Diego, rescuing Kearny's command.[40] Stockton and Kearny went on to recover Los Angeles and force the capitulation of Alta California with the "Treaty of Cahuenga" on January 13, 1847. As a result of the Mexican–American War of 1846–48, the territory of Alta California, including San Diego, was ceded to the United States by Mexico, under the terms of the Treaty of Guadalupe Hidalgo in 1848. The Mexican negotiators of that treaty tried to retain San Diego as part of Mexico, but the Americans insisted that San Diego was "for every commercial purpose of nearly equal importance to us with that of San Francisco", and the Mexican–American border was eventually established to be one league south of the southernmost point of San Diego Bay.[41]

American period

[edit]

View of San Diego Bay in 1873 following the U.S. conquest of California

The state of California was admitted to the United States in 1850. That same year San Diego was designated the seat of the newly established County of San Diego and was incorporated as a city. Joshua H. Bean, the last alcalde of San Diego, was elected the first mayor. Two years later the city was bankrupt;[42] the California legislature revoked the city's charter and placed it under control of a board of trustees, where it remained until 1889. A city charter was reestablished in 1889, and today's city charter was adopted in 1931.[43]

The original town of San Diego was located at the foot of Presidio Hill, in the area which is now Old Town San Diego State Historic Park. The location was not ideal, being several miles away from navigable water at its port at La Playa. In 1850, William Heath Davis promoted a new development by the bay shore called "New San Diego", several miles south of the original settlement; however, for several decades the new development consisted only of a pier, a few houses and an Army depot for the support of Fort Yuma. After 1854, the fort became supplied by sea and by steamboats on the Colorado River and the depot fell into disuse. From 1857 to 1860, San Diego became the western terminus of the San Antonio–San Diego Mail Line, the earliest overland stagecoach and mail operation from the Eastern United States to California, coming from Texas through New Mexico Territory in less than 30 days.[44]

Oval, black and white shoulder-height portrait of a man in his forties or fifties, slightly bal

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Horton Plaza honors Alonzo Horton, who helped develop Downtown.

In the late 1860s, Alonzo Horton promoted a move to the bayside area, which he called "New Town" and which became downtown San Diego. Horton promoted the area heavily, and people and businesses began to relocate to New Town because its location on San Diego Bay was convenient to shipping. New Town soon eclipsed the original settlement, known to this day as Old Town, and became the economic and governmental heart of the city.[45] Still, San Diego remained a relative backwater town until the arrival of a railroad connection in 1878.

In 1912, San Diego was the site of a free speech fight between the Industrial Workers of the World and the city government who passed an ordinance forbidding the freedom of speech along an area of "Soapbox Row" that led to civil disobedience, vigilantism, police violence, the abduction of Emma Goldman's husband Ben Reitman and multiple riots.[46][47] San Diego's proximity to Tijuana during the Mexican Revolution made this

one of the most significant free speech fights during the Wobbly era.[48]

In 1916, the neighborhood of Stingaree, the original home of San Diego's first Chinatown and "Soapbox Row", was demolished by anti-vice campaigners to make way for the Gaslamp Quarter.[49]
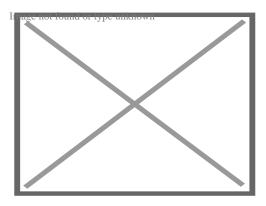
Hand drawn illustration of Balboa Park

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Balboa Park was built for the Panama-California Exposition of 1915.

In the early part of the 20th century, San Diego hosted the World's Fair twice: the Panama–California Exposition in 1915 and the California Pacific International Exposition in 1935. Both expositions were held in Balboa Park, and many of the Spanish/Baroque-style buildings that were built for those expositions remain to this day as central features of the park.[50] The menagerie of exotic animals featured at the 1915 exposition provided the basis for the San Diego Zoo.[51] During the 1950s there was a citywide festival called Fiesta del Pacifico highlighting the area's Spanish and Mexican past.[52]

The southern portion of the Point Loma peninsula was set aside for military purposes as early as 1852. Over the next several decades the Army set up a series of coastal artillery batteries and named the area Fort Rosecrans.[53] Significant U.S. Navy presence began in 1901 with the establishment of the Navy Coaling Station in Point Loma, and expanded greatly during the 1920s.[54] By 1930, the city was host to Naval Base San Diego, Naval Training Center San Diego, San Diego Naval Hospital, Camp Matthews, and Camp Kearny (now Marine Corps Air Station Miramar). The city was also an early center for aviation: as early as World War I, San Diego was proclaiming itself "The Air Capital of the West".[55] The city was home to important airplane developers and manufacturers like Ryan Airlines (later Ryan Aeronautical), founded in 1925, and Consolidated Aircraft (later

Convair), founded in 1923.[56] Charles A. Lindbergh's plane, the *Spirit of St. Louis*, was built in San Diego in 1927 by Ryan Airlines.[55]
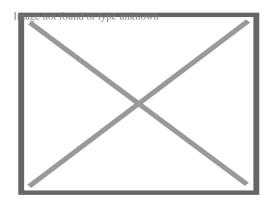

Downtown San Diego, c. 1903

During World War II, San Diego became a major hub of military and defense activity, due to the presence of so many military installations and defense manufacturers. The city's population grew rapidly during and after World War II, more than doubling between 1930 (147,995) and 1950 (333,865).[57] During the final months of the war, the Japanese had a plan to target multiple U.S. cities for biological attack, starting with San Diego. The plan was called "Operation Cherry Blossoms at Night" and called for kamikaze planes filled with fleas infected with plague (*Yersinia pestis*) to crash into civilian population centers in the city, hoping to spread plague in the city and effectively kill tens of thousands of civilians. The plan was scheduled to launch on September 22, 1945, but was not carried out because Japan surrendered five weeks earlier.[58][59][60]

After World War II, the military continued to play a major role in the local economy, but post–Cold War cutbacks took a heavy toll on the local defense and aerospace industries. The resulting downturn led San Diego leaders to seek to diversify the city's economy by focusing on research and science, as well as tourism.[61]

In the early 1960s, Tom Hom would become the first Asian American member of the San Diego City Council.[62] He would be succeeded by Leon Williams, the first Black member of the city council.[63]

Starting in the 1980s, many areas of Downtown, such as the Marina District, underwent redevelopment.

From the start of the 20th century through the 1970s, the American tuna fishing fleet and tuna canning industry were based in San Diego, "the tuna capital of the world".[64] San Diego's first tuna cannery was founded in 1911, and by the mid–1930s the canneries employed more than 1,000 people. A large fishing fleet supported the canneries, mostly staffed by immigrant fishermen from Japan, and later from the Azores and Italy whose influence is still felt in neighborhoods like Little Italy and Point Loma.[65][66] Due to rising costs and foreign competition, the last of the canneries closed in the early 1980s.[67]
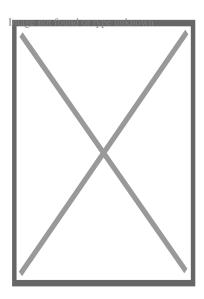
Downtown San Diego was in decline in the 1960s and 1970s, but experienced some urban renewal since the early 1980s, including the opening of Horton Plaza, the revival of the Gaslamp Quarter, and the construction of the San Diego Convention Center; Petco Park opened in 2004.[68] Outside of downtown, San Diego annexed large swaths of land and for suburban expansion to the north and control of the San Ysidro Port of Entry.

As the Cold War ended, the military shrank and so did defense spending. San Diego has since become a center of the emerging biotech industry and is home to telecommunications giant Qualcomm. San Diego had also grown in the tourism industry with the popularity of attractions such as the San Diego Zoo, SeaWorld San Diego, and Legoland California in Carlsbad.[69]
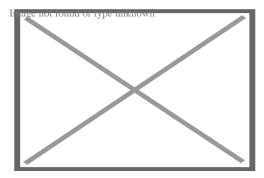
Geography

[edit]
See also: List of beaches in San Diego, California and Parks in San Diego

Satellite view of the San Diego–Tijuana area, a transborder agglomeration straddling the Mexico–United States border in the Californias

According to SDSU professor emeritus Monte Marshall, San Diego Bay is "the surface expression of a north–south-trending, nested graben". The Rose Canyon and Point Loma fault zones are part of the San Andreas Fault system. About 40 miles (64 km) east of the bay are the Laguna Mountains in the Peninsular Ranges, which are part of the American Cordillera.[70]

The city lies on approximately 200 deep canyons and hills separating its mesas, creating small pockets of natural open space scattered throughout the city and giving it a hilly geography.[71] Traditionally, San Diegans have built their homes and businesses on the mesas, while leaving the urban canyons relatively wild.[72] Thus, the canyons give parts of the city a segmented feel, creating gaps between otherwise proximate neighborhoods and contributing to a low-density, car-centered environment. The San Diego River runs through the middle of San Diego from east to west, creating a river valley that serves to divide the city into northern and southern segments. Several reservoirs and Mission Trails Regional Park also lie between and separate developed areas of the city.

Torrey Pines State Natural Reserve

Notable peaks within the city limits include Cowles Mountain, the highest point in the city at 1,591 feet (485 m);[9] Black Mountain at 1,558 feet (475 m); and Mount Soledad at 824 feet (251 m). The Cuyamaca Mountains and Laguna Mountains rise to the east of the city, and beyond the mountains are desert areas. Cleveland National Forest is a half-hour drive from downtown San Diego. Numerous farms are found in the valleys northeast and southeast of the city.

Climate

Main article: Climate of San Diego

San Diego
Climate chart (explanation)

J F M A M J J A S O N D

75 77 77 75
66 66 67 69 70 72 ... 71 66
19 19 19 20 21 22 24 25 25 24 22 19
19 20 19   16 13 10
10 11 13 14   16 13 10

1.5 0.7 0.3 0.1 0.0 0.1 0.5 0.8 1.7
50 56 37 17 7.1 1.3 2.0 3 13 20 42

■ Average max. and min. temperatures in °F
■ Average max. and min. temperatures in °C
■ Precipitation totals in inches
■ Precipitation totals in mm

Source: NOAA[73]

Under the Köppen–Geiger climate classification system, the San Diego area has been variously categorized as having either a hot semi–arid climate (*BSh* in the original classification[74] and *BSkn* in modified Köppen classification with the n denoting summer fog)[75] or a hot-summer Mediterranean climate[76] (*Csa*).[77] San Diego's climate is characterized by warm, dry summers and mild winters, with most of the annual precipitation falling between December and March. The city has a mild climate year–round,[78] with an average of 201 days above 70 °F (21 °C) and low rainfall (9–13 inches [230–330 mm] annually).

The climate in San Diego, like most of Southern California, often varies significantly over short geographical distances, resulting in microclimates. In San Diego, this is mostly because of the city's topography (the Bay, and the numerous hills, mountains, and canyons). Frequently, particularly during the "May gray/June gloom" period, a thick "marine layer" cloud cover keeps the air cool and damp within a few miles of the coast, but yields to bright cloudless sunshine approximately 5–10 miles (8–16 km) inland.[79] Sometimes the June gloom lasts into July, causing cloudy skies over most of San Diego for the entire day.[80][81] Even in the absence of June gloom, inland areas experience much more significant temperature variations than coastal areas, where the ocean serves as a moderating influence. Thus, for example, downtown San Diego averages January lows of 50 °F (10 °C) and August highs of 78 °F (26 °C). The city of El Cajon, just 12 miles (19 km) inland from downtown San Diego, averages January lows of 42 °F (6 °C) and August highs of 88 °F (31 °C).

The average surface temperature of the water at Scripps Pier in the California Current has increased by almost 3 °F (1.7 °C) since 1950, according to scientists at Scripps Institution of Oceanography.[82] Additionally, the mean minimum is now above 40 °F (4 °C), putting San Diego in hardiness zone 11, with the last freeze having occurred many decades ago.

Surfers at Pacific Beach

Annual rainfall along the coast averages 10.65 inches (271 mm) and the median is 9.6 inches (240 mm).[83] The months of December through March supply most of the rain, with February the only month averaging 2 inches (51 mm) or more. The months of May through September tend to be almost completely dry. Although there are few wet days per month during the rainy period, rainfall can be heavy when it does fall. Rainfall is usually greater in the higher elevations of San Diego; some of the higher areas can receive 11–15 inches (280–380 mm) per year. Variability from year to year can be dramatic: in the wettest years of 1883/1884 and 1940/1941, more than 24 inches (610 mm) fell, whilst in the driest years there was as little as 3.2 inches (80 mm). The wettest month on record is December 1921 with 9.21 inches (234 mm).

Snow in the city is rare, having been observed only six times in the century and a half that records have been kept.[84] On February 21, 2019, snow fell and accumulated in residential areas of the city, but none fell in the downtown area.[85]

○ **v**
○ **t**
○ **e**

Climate data for San Diego Int'l Airport (1991–2020 normals,[a] extremes 1874–present)[b]

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °F (°C)	88 (31)	91 (33)	99 (37)	98 (37)	98 (37)	101 (38)	100 (38)	98 (37)	111 (44)	107 (42)	100 (38)	88 (31)	111 (44)

Mean maximum °F (°C)	78.8 (26.0)	78.6 (25.9)	80.2 (26.8)	82.1 (27.8)	79.3 (26.3)	79.6 (26.4)	82.9 (28.3)	85.2 (29.6)	90.6 (32.6)	87.8 (31.0)	85.4 (29.7)	77.0 (25.0)	94.0 (34.4)
Mean daily maximum °F (°C)	66.4 (19.1)	66.2 (19.0)	67.0 (19.4)	68.8 (20.4)	69.5 (20.8)	71.7 (22.1)	75.3 (24.1)	77.3 (25.2)	77.2 (25.1)	74.6 (23.7)	70.7 (21.5)	66.0 (18.9)	70.9 (21.6)
Daily mean °F (°C)	58.4 (14.7)	59.0 (15.0)	60.7 (15.9)	62.9 (17.2)	64.8 (18.2)	67.2 (19.6)	70.7 (21.5)	72.4 (22.4)	71.7 (22.1)	68.1 (20.1)	62.7 (17.1)	57.9 (14.4)	64.7 (18.2)
Mean daily minimum °F (°C)	50.3 (10.2)	51.8 (11.0)	54.5 (12.5)	57.1 (13.9)	60.0 (15.6)	62.6 (17.0)	66.1 (18.9)	67.5 (19.7)	66.2 (19.0)	61.5 (16.4)	54.8 (12.7)	49.8 (9.9)	58.5 (14.7)
Mean minimum °F (°C)	43.7 (6.5)	46.1 (7.8)	48.7 (9.3)	51.9 (11.1)	55.8 (13.2)	59.3 (15.2)	63.0 (17.2)	63.9 (17.7)	61.8 (16.6)	55.5 (13.1)	48.2 (9.0)	43.0 (6.1)	42.6 (5.9)
Record low °F (°C)	25 (−4)	34 (1)	36 (2)	39 (4)	45 (7)	50 (10)	54 (12)	54 (12)	50 (10)	43 (6)	36 (2)	32 (0)	25 (−4)
Average precipitation inches (mm)	1.98 (50)	2.20 (56)	1.46 (37)	0.65 (17)	0.28 (7.1)	0.05 (1.3)	0.08 (2.0)	0.01 (0.25)	0.12 (3.0)	0.50 (13)	0.79 (20)	1.67 (42)	9.79 (249)
Average precipitation days (≥ 0.01 in)	6.5	7.1	6.2	3.8	2.2	0.7	0.7	0.3	0.9	2.4	3.7	5.8	40.3
Average relative humidity (%)	63.1	65.7	67.3	67.0	70.6	74.0	74.6	74.1	72.7	69.4	66.3	63.7	69.0
Average dew point °F (°C)	42.8 (6.0)	45.3 (7.4)	47.3 (8.5)	49.5 (9.7)	53.1 (11.7)	57.0 (13.9)	61.2 (16.2)	62.4 (16.9)	60.6 (15.9)	55.6 (13.1)	48.6 (9.2)	43.2 (6.2)	52.2 (11.2)
Mean monthly sunshine hours	239.3	227.4	261.0	276.2	250.5	242.4	304.7	295.0	253.3	243.4	230.1	231.3	3,054.6

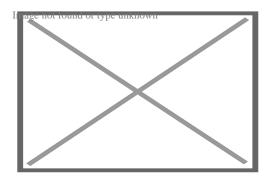| Percentage possible sunshine	75	74	70	71	58	57	70	71	68	69	73	74	69

Source: NOAA (sun, relative humidity, and dew point 1961–1990)[87][88][89]

1. ^ Mean monthly maxima and minima (i.e. the highest and lowest temperature readings during an entire month or year) calculated based on data at said location from 1991 to 2020.
2. ^ Official precipitation records for San Diego were kept at the Weather Bureau Office in downtown from October 1850 to December 1859 at the Mission San Diego and from November 1871 to June 1939 and a variety of buildings at downtown, and at San Diego Int'l (Lindbergh Field) since July 1939.[86] Temperature records, however, only date from October 1874. For more information on data coverage, see ThreadEx

Ecology

[edit]

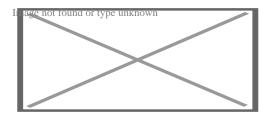See also: California coastal sage and chaparral

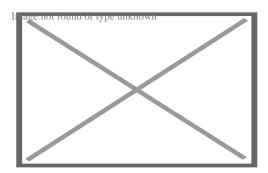
View of Coronado from Cabrillo National Monument

Like much of Southern California, the majority of San Diego's current area was originally occupied on the west by coastal sage scrub and on the east by chaparral, plant communities made up mostly of drought-resistant shrubs.[90] The steep and varied topography and proximity to the ocean create a number of different habitats within the city limits, including tidal marsh and canyons. The chaparral and coastal sage scrub habitats in low elevations along the coast are prone to wildfire, and the rates of fire

increased in the 20th century, due primarily to fires starting near the borders of urban and wild areas.[91]

San Diego's broad city limits encompass a number of large nature preserves, including Torrey Pines State Natural Reserve, Los Peñasquitos Canyon Preserve, and Mission Trails Regional Park. Torrey Pines State Natural Reserve and a coastal strip continuing to the north constitute one of only two locations where the rare species of Torrey Pine, *Pinus torreyana*, is found.[92] Due to the steep topography that prevents or discourages building, along with some efforts for preservation, there are also a large number of canyons within the city limits that serve as nature preserves, including Switzer Canyon, Tecolote Canyon Natural Park,[93] and Marian Bear Memorial Park in San Clemente Canyon,[94] as well as a number of small parks and preserves.

Cowles Mountain from Lake Murray

Serra Museum at Presidio Park

San Diego County has one of the highest counts of animal and plant species that appear on the endangered list of counties in the United States.[95] Because of its diversity of habitat and its position on the Pacific Flyway, San Diego County has recorded 492 different bird species, more than any other region in the country.[96] San Diego always scores high in the number of bird species observed in the annual Christmas Bird Count, sponsored by the Audubon Society, and it is known as one of the "birdiest" areas in the United States.[97][98]

San Diego and its backcountry suffer from periodic wildfires. In October 2003, San Diego was the site of the Cedar Fire, at that time the largest wildfire in California over

the past century.[99] The fire burned 280,000 acres (1,100 km^2), killed 15 people, and destroyed more than 2,200 homes.[100] In addition to damage caused by the fire, smoke resulted in a significant increase in emergency room visits; the poor air quality caused San Diego County schools to close for a week.[101] The October 2007 California wildfires destroyed some areas, particularly within Rancho Bernardo, as well as the nearby communities of Rancho Santa Fe and Ramona.[95]

Neighborhoods

[edit]

Main article: List of communities and neighborhoods of San Diego

The City of San Diego recognizes 52 individual areas as Community Planning Areas.[102] Within a given planning area there may be several distinct neighborhoods. Altogether the city contains more than 100 identified neighborhoods.

Downtown San Diego is located on San Diego Bay. Balboa Park encompasses several mesas and canyons to the northeast, surrounded by older, dense urban communities including Hillcrest and North Park. To the east and southeast lie City Heights, the College Area, and Southeast San Diego. To the north lies Mission Valley and Interstate 8. The communities north of the valley and freeway, and south of Marine Corps Air Station Miramar, include Clairemont, Kearny Mesa, Tierrasanta, and Navajo. Stretching north from Miramar are the northern suburbs of Mira Mesa, Scripps Ranch, Rancho Peñasquitos, and Rancho Bernardo. The far northeast portion of the city encompasses Lake Hodges and the San Pasqual Valley, which holds an agricultural preserve. Carmel Valley and Del Mar Heights occupy the northwest corner of the city. To their south are Torrey Pines State Natural Reserve and the business center of the Golden Triangle. Further south are the beach and coastal communities of La Jolla, Pacific Beach, Mission Beach, and Ocean Beach. Point Loma occupies the peninsula across San Diego Bay from downtown. The communities of South San Diego (an Exclave), such as San Ysidro and Otay Mesa, are located next to the Mexico–United States border, and are physically separated from the rest of the city by the cities of National City and Chula Vista. A narrow strip of land at the bottom of San Diego Bay connects these southern neighborhoods with the rest of the city.[103]

- Selection of neighborhoods in San Diego
  La Jolla

-
  Image not found or type unknown

  La Jolla
- North Park

  Image not found or type unknown

  North Park
- Point Loma

  Image not found or type unknown

  Point Loma
- East Village

  Image not found or type unknown

  East Village
  Gaslamp Quarter

-
  Image not found or type unknown

  Gaslamp Quarter
- Hillcrest

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  Hillcrest
- Linda Vista

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  Linda Vista

- Columbia

Image not found or type unknown
Columbia
  - Normal Heights

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Normal Heights
  - Rancho Bernardo

Image not found or type unknown
Rancho Bernardo
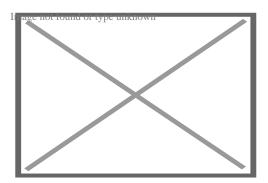Marina district

  -

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Marina district

For the most part, San Diego neighborhood boundaries tend to be understood by its residents based on geographical boundaries like canyons and street patterns.[104] The city recognized the importance of its neighborhoods when it organized its 2008 General Plan around the concept of a "City of Villages".[105]

Cityscape

[edit]

Main article: List of tallest buildings in San Diego

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Aerial view of central San Diego

San Diego was originally centered on the Old Town district, but by the late 1860s the focus had shifted to the bayfront, in the belief that this new location would increase trade. As the "New Town" – present-day Downtown – waterfront location quickly developed, it eclipsed Old Town as the center of San Diego.[45]

The first skyscraper over 300 feet (91 m) in San Diego was the El Cortez Hotel, built in 1927; it was the tallest building in the city until 1963.[106] As time went on, multiple buildings claimed the title of San Diego's tallest skyscraper, including the 530 B Street and Symphony Towers. Currently the tallest building in San Diego is One America Plaza, standing 500 feet (150 m) tall, which was completed in 1991.[107] The downtown skyline contains no supertall buildings due to a regulation put in place by the Federal Aviation Administration (FAA) in the 1970s, which set a 500 feet (152 m) limit on the height of buildings within a one-mile (1.6 km) radius of San Diego International Airport.[108] An iconic description of the skyline includes its skyscrapers being compared to the tools of a toolbox.[109]

There are several new high-rises under construction, including two that exceed 400 feet (122 m) in height.

Demographics

[edit]

Further information: Demographics of San Diego County, California and Hispanics and Latinos in San Diego

Historical population

Census	Pop.	Note	%±
1850	500		—
1860	731		46.2%
1870	2,300		214.6%
1880	2,637		14.7%
1890	16,159		512.8%
1900	17,700		9.5%
1910	39,578		123.6%
1920	74,361		87.9%

1930	147,995	99.0%
1940	203,341	37.4%
1950	334,387	64.4%
1960	573,224	71.4%
1970	696,769	21.6%
1980	875,538	25.7%
1990	1,110,549	26.8%
2000	1,223,400	10.2%
2010	1,307,402	6.9%
2020	1,386,932	6.1%
2024 (est.)	1,404,452 [11]	1.3%

Population History of Western
U.S. Cities & Towns, 1850–1990[57]
U.S. Decennial Census[110]
2010–2020[10]

Historical racial composition	2020[111]	2010[112]	1990[113]	1970[113]	1940[113]
White (non-Hispanic)	40.7%	45.1%	58.7%	78.9%[a]	n/a
Hispanic or Latino (of any race)	29.7%	28.8%	20.7%	10.7%[a]	n/a
Asian (non-Hispanic)	17.6%	15.9%	11.8%	2.2%	1.0%
Black or African American (non-Hispanic)	6.6%	6.7%	9.4%	7.6%	2.0%

1. ^ ***a b*** From 15% sample

2020

[edit]

San Diego, California – Racial and ethnic composition
Note: the US Census treats Hispanic/Latino as an ethnic category. This table excludes Latinos from the racial categories and assigns them to a separate category. Hispanics/Latinos may be of any race.

Race / Ethnicity (*NH = Non-Hispanic*)	Pop 2000[114]	Pop 2010[115]	Pop 2020[116]	% 2000	% 2010	% 2020
White alone (NH)	603,892	589,702	565,128	49.36%	45.10%	40.75%
Black or African American alone (NH)	92,830	82,497	77,542	7.59%	6.31%	5.59%
Native American or Alaska Native alone (NH)	4,267	3,545	3,200	0.35%	0.27%	0.23%
Asian alone (NH)	164,895	204,347	243,428	13.48%	15.63%	17.55%
Pacific Islander alone (NH)	5,311	5,178	4,887	0.43%	0.40%	0.35%
Other race alone (NH)	3,065	3,293	8,208	0.25%	0.25%	0.59%
Mixed race or Multiracial (NH)	38,388	42,820	73,243	3.14%	3.28%	5.28%
Hispanic or Latino (any race)	310,752	376,020	411,286	25.40%	28.76%	29.65%
Total	1,223,400	1,307,402	1,386,932	100.00%	100.00%	100.00%
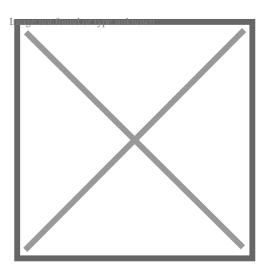
2010

[edit]

The city had a population of 1,307,402 according to the 2010 census, distributed over a land area of 372.1 square miles (963.7 km^2).[117] The urban area of San Diego had a total population of 2,956,746, making it the third-largest in the state, after those of Los Angeles and San Francisco.

The 2010 population represented an increase of just under 7% from the 1,223,400 people reported in 2000.[112] The population density was 3,771.9 inhabitants per square mile (1,456.3/km^2). The racial makeup of San Diego was 58.9% White, 6.7% African American, 0.6% Native American, 15.9% Asian (5.9% Filipino, 2.7% Chinese, 2.5% Vietnamese, 1.3% Indian, 1.0% Korean, 0.7% Japanese, 0.4% Laotian, 0.3% Cambodian, 0.1% Thai). 0.5% Pacific Islander (0.2% Guamanian, 0.1% Samoan, 0.1% Native Hawaiian), 12.3% from other races, and 5.1% from two or more races. 28.8% of the population was

Hispanic or Latino (of any race);[112][118] 24.9% of the total population was of Mexican heritage, 1.4% Spanish and 0.6% Puerto Rican. The median age of Hispanic residents was 27.5 years, compared to 35.1 years overall and 41.6 years among non–Hispanic whites; Hispanic San Diegans were the largest group under the age of 18, while non–Hispanic whites constituted 63.1% of population 55 and older.

Map of racial distribution in San Diego, 2010 U.S. Census. Each dot is 25 people: â¬¤ Non–Hispanic White

â¬¤ Black

â¬¤ Asian

â¬¤ Hispanic
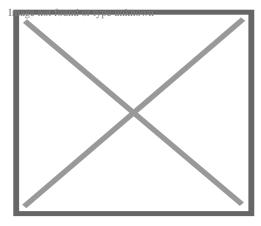
â¬¤ Other

As of January 2019, the San Diego City and County had the fifth–largest homeless population among major cities in the United States, with 8,102 people experiencing homelessness.[119] In the city of San Diego, 4,887 individuals were experiencing homelessness according to the 2020 count.[120] A December 11, 2023, article in *The San Diego Union-Tribune* by Blake Nelson reports a notable decline in the homeless population in downtown San Diego, specifically in the urban core. According to data from the Downtown San Diego Partnership, the number of individuals living outside or in vehicles has reached a two–year low, standing at approximately 1,200 as of last month. The decrease is attributed to the implementation of the city's camping ban and

the concerted efforts to establish new shelters. While enforcement has led to relatively few individuals being punished, the threat of legal consequences appears to have played a role in the reduction.[121]

In 2000 there were 451,126 households, out of which 30.2% had children under the age of 18 living with them, 44.6% were married couples living together, 11.4% had a female householder with no husband present, and 39.8% were non-families. Households made up of individuals account for 28.0%, and 7.4% had someone living alone who was 65 years of age or older. The average household size was 2.61, and the average family size was 3.30.

The U.S. Census Bureau reported that in 2000, 24.0% of San Diego residents were under 18, and 10.5% were 65 and over.[112] As of 2011 the median age was 35.6; more than a quarter of residents were under age 20 and 11% were over age 65.[122] Millennials (ages 26 through 42) constitute 27.1% of San Diego's population, the second-highest percentage in a major U.S. city.[123] The San Diego County regional planning agency, SANDAG, provides tables and graphs breaking down the city population into five-year age groups.[124]

Barrio Logan is a Chicano cultural hub and ethnic enclave.

In 2000, the median income for a household in the city was $45,733, and the median income for a family was $53,060. Males had a median income of $36,984 versus $31,076 for females. The per capita income for the city was $35,199.[125] According to *Forbes* in 2005, San Diego was the fifth wealthiest U.S. city,[126] but about 10.6% of families and 14.6% of the population were below the poverty line, including 20.0% of those under age 18 and 7.6% of those age 65 or over.[125] As of January 1, 2008, estimates by the San Diego Association of Governments revealed that the household median income for San Diego rose to $66,715, up from $45,733 in 2000.[127]

San Diego was named the ninth-most LGBT-friendly city in the U.S. in 2013.[128] The city also has the seventh-highest population of gay residents in the U.S. Additionally in 2013, San Diego State University (SDSU), one of the city's prominent universities, was named one of the top LGBT-friendly campuses in the nation.[129]

Religion

[edit]

According to a 2014 study by the Pew Research Center, 68% of the population of the city identified themselves as Christians, with 32% professing adherence to various Protestant churches and 32% professing Roman Catholic beliefs.[130][131] while 27% claim no religious affiliation. The same study found that followers of other religions (including Judaism, Buddhism, Islam, and Hinduism) collectively made up about 5% of the population.

Foreign-born population
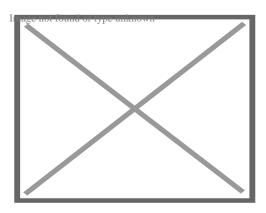
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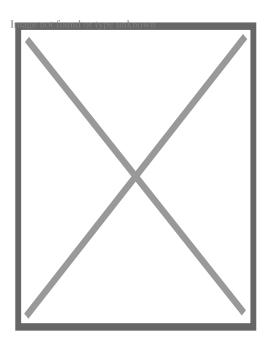The majority of San Diego's foreign-born population were born in Mexico, the Philippines, China and Vietnam.[132]

Economy

[edit]

Main article: Economy of San Diego

An F/A-18 Hornet flying over San Diego. The city serves as a major hub for the defense industry and U.S. military.

One America Plaza is the tallest building in San Diego.

The largest sectors of San Diego's economy are defense/military, tourism, international trade, and research/manufacturing.[133][134] San Diego recorded a median household income of $79,646 in 2018, an increase of 3.89% from $76,662 in 2017.[135] The median property value in San Diego in 2018 was $654,700,[135] and the average home has two cars per household.[135]

Top employers

[edit]

See also: List of companies headquartered in San Diego
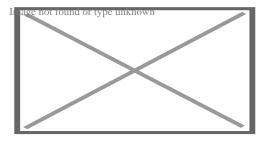
According to the city's 2024 Annual Comprehensive Financial Report,[136] the top employers in the city are:

Employer	No. of Employees
Naval Base San Diego	40,472
University of California, San Diego	39,688
Sharp HealthCare	20,139
County of San Diego	18,936

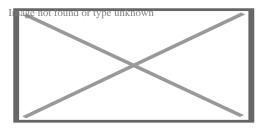| San Diego Unified School District | 17,226 |
Scripps Health	14,732
City of San Diego	13,408
Qualcomm	10,124
Kaiser Permanente	7,687
Northrop Grumman	6,639

Defense and military

[edit]

View of Naval Base San Diego

The economy of San Diego is influenced by its deepwater port, which includes the only major submarine and shipbuilding yards on the West Coast.[137] Several major national defense contractors were started and are headquartered in San Diego, including General Atomics, Cubic, and NASSCO.[138][139]

San Diego hosts the largest naval fleet in the world:[140] In 2008 it was home to 53 ships, over 120 tenant commands, and more than 35,000 sailors, marines, Department of Defense civilian employees and contractors.[141] About 5 percent of all civilian jobs in the county are military-related, and 15,000 businesses in San Diego County rely on Department of Defense contracts.[141]
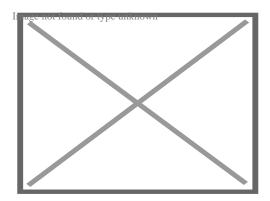

Marine Corps Recruit Depot

Military bases in San Diego include US Navy facilities, Marine Corps bases, and Coast Guard stations. The city is "home to the majority of the U.S. Pacific Fleet's surface combatants, all of the Navy's West Coast amphibious ships and a variety of Coast Guard and Military Sealift Command vessels".[141][142]

The military infrastructure in San Diego is still growing and developing, with numerous military personnel stationed there, numbers of which are expected to rise. This plays a significant role in the city's economy, as of 2020, it provides roughly 25% of the GDP and provides 23% of the total jobs in San Diego.[143][144][145]

Tourism

[edit]

Casa de Balboa at Balboa Park is home to the San Diego History Center.

Tourism is a major industry owing to the city's climate, beaches,[146] and tourist attractions such as Balboa Park, Belmont Park, San Diego Zoo, San Diego Zoo Safari Park, and SeaWorld San Diego. San Diego's Spanish and Mexican heritage is reflected in many historic sites across the city, such as Mission San Diego de Alcalá and Old Town San Diego State Historic Park. Also, the local craft brewing industry attracts an increasing number of visitors[147] for "beer tours" and the annual San Diego Beer Week in November;[148] San Diego has been called "America's Craft Beer Capital".[149]

San Diego County hosted more than 32 million visitors in 2012; collectively they spent an estimated $8 billion. The visitor industry provides employment for more than 160,000 people.[150]

San Diego's cruise ship industry used to be the second-largest in California. Numerous cruise lines operate out of San Diego. However, cruise ship business has been in decline since 2008, when the Port hosted over 250 ship calls and more than 900,000 passengers. By 2016–2017, the number of ship calls had fallen to 90.[151]
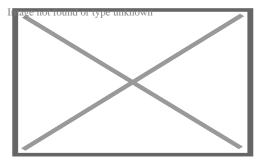
Local sightseeing cruises are offered in San Diego Bay and Mission Bay, as well as whale-watching cruises to observe the migration of gray whales, peaking in mid-January.[152] Sport fishing is another popular tourist attraction; San Diego is home to southern California's biggest sport fishing fleet.[153]
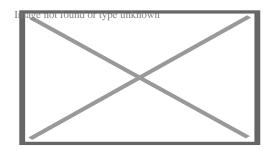
International trade

[edit]

The Port of San Diego is the third-busiest port in California.

San Diego's commercial port and its location on the United States–Mexico border make international trade an important factor in the city's economy. The city is authorized by the United States government to operate as a foreign-trade zone.[154]

The city shares a 15-mile (24 km) border with Mexico that includes two border crossings. San Diego hosts the busiest international border crossing in the world, in the San Ysidro neighborhood at the San Ysidro Port of Entry.[155] A second, primarily commercial border crossing operates in the Otay Mesa area; it is the largest commercial crossing on the California–Baja California border and handles the third-highest volume of trucks and dollar value of trade among all United States-Mexico land crossings.[156]
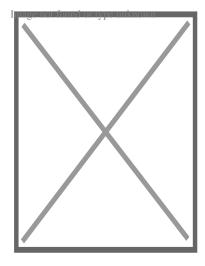
San Ysidro Port of Entry is the 4th-busiest border crossing in the world.

The Port of San Diego is the third-busiest port in California and one of the busiest on the West Coast. One of the Port of San Diego's two cargo facilities is located in downtown San Diego at the Tenth Avenue Marine Terminal. This terminal has facilities for containers, bulk cargo, and refrigerated and frozen storage, so that it can handle the import and export of many commodities.[157] In 2009 the Port of San Diego handled 1,137,054 short tons of total trade; foreign trade accounted for 956,637 short tons while domestic trade amounted to 180,417 short tons.[158]

Historically tuna fishing and canning was one of San Diego's major industries,[159] although the American tuna fishing fleet is no longer based in San Diego. Seafood company Bumble Bee Foods is headquartered in San Diego, as was Chicken of the Sea until 2018.[160][161]

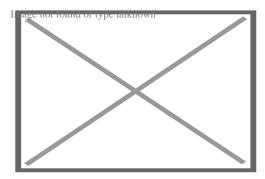## Companies

[edit]

The AT&T Building

San Diego hosts several major producers of wireless cellular technology. Qualcomm was founded and is headquartered in San Diego, and is one of the largest private-sector employers in San Diego.[162] Other wireless industry manufacturers headquartered here include Nokia, LG Electronics,[163] Kyocera International,[164] Cricket Communications and Novatel Wireless.[165] San Diego also has the U.S. headquarters

for the Slovakian security company ESET.[166] San Diego has been designated as an iHub Innovation Center for potential collaboration between wireless and the life sciences.[167]

The University of California, San Diego and other research institutions have helped to fuel the growth of biotechnology.[168] In 2013, San Diego had the second-largest biotech cluster in the United States, below Greater Boston and above the San Francisco Bay Area.[169] There are more than 400 biotechnology companies in the area.[170] In particular, the La Jolla and nearby Sorrento Valley areas are home to offices and research facilities for numerous biotechnology companies.[171] Major biotechnology companies like Illumina and Neurocrine Biosciences are headquartered in San Diego, while many other biotech and pharmaceutical companies have offices or research facilities in San Diego. San Diego is also home to more than 140 contract research organizations (CROs) that provide contract services for pharmaceutical and biotechnology companies.[172]

Real estate

[edit]

La Jolla is a highly valued real estate market in San Diego.

San Diego has high real estate prices. San Diego home prices peaked in 2005, and then declined along with the national trend. As of December 2010, prices were down 36 percent from the peak,[173] median price of homes having declined by more than $200,000 between 2005 and 2010.[174] As of May 2015, the median price of a house was $520,000.[175] In November 2018 the median home price was $558,000. The San Diego metropolitan area had one of the worst housing affordability rankings of all metropolitan areas in the United States in 2009.[176] The San Diego Housing Market

experienced a decline in the median sold price of existing single-family homes between December 2022 and January 2023, with a 2.9% decrease from $850,000 to $824,950.[177] As of 2023, the majority of homes (nearly 60%) in San Diego are listed above $1 million, with the city's median home price at $910,000, ranking it fourth highest among the 30 largest U.S. cities.[178][179]

Consequently, San Diego has experienced negative net migration since 2004. A significant number of people have moved to adjacent Riverside County, commuting daily to jobs in San Diego, while others are leaving the area altogether and moving to more affordable regions.[180]
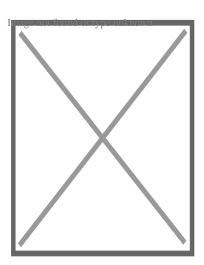
Government

[edit]

Local government

[edit]

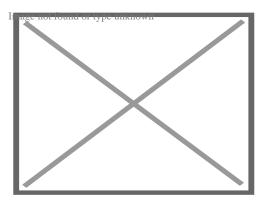See also: Mayor of San Diego, San Diego City Council, and Government of San Diego County

Todd Gloria is the current mayor of San Diego.

The city is governed by a mayor and a seventh-member city council. In 2006, its government changed from a council–manager government to a strong mayor government, as decided by a citywide vote in 2004. The mayor is in effect the chief executive officer of the city, while the council is the legislative body.[181] The City of

San Diego is responsible for police, public safety, streets, water and sewer service, planning and zoning, and similar services within its borders. San Diego is a sanctuary city ,[182] however, San Diego County is a participant of the Secure Communities program.[183][184] As of 2011, the city had one employee for every 137 residents, with a payroll greater than $733 million.[185]

The members of the city council are each elected from single-member districts within the city. The mayor and city attorney are elected directly by the voters of the entire city. The mayor, city attorney, and council members are elected to four-year terms, with a two-term limit.[186] Elections are held on a non-partisan basis per California state law; nevertheless, most officeholders do identify themselves as either Democrats or Republicans. In 2007, registered Democrats outnumbered Republicans by about 7 to 6 in the city,[187] and Democrats currently (as of 2022) hold an 8–1 majority in the city council. The current mayor, Todd Gloria, is a member of the Democratic Party.

County Administration Center, seat of San Diego County Government
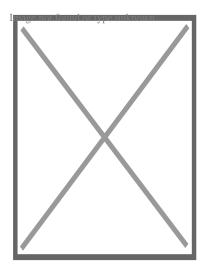
San Diego is part of San Diego County, and includes all or part of the 1st, 2nd, 3rd and 4th supervisorial districts of the San Diego County Board of Supervisors,[188] Other county officers elected in part by city residents include the Sheriff, District Attorney, Assessor/Recorder/County Clerk, and Treasurer/Tax Collector.

Areas of the city immediately adjacent to San Diego Bay ("tidelands") are administered by the Port of San Diego, a quasi-governmental agency which owns all the property in the tidelands and is responsible for its land use planning, policing, and similar functions. San Diego is a member of the regional planning agency San Diego Association of Governments (SANDAG). Public schools within the city are managed and funded by independent school districts (see below).

After narrowly supporting Lyndon B. Johnson in 1964, San Diego provided majorities to all six Republican presidential candidates from 1968 to 1988. However, in more recent decades, San Diego has trended in favor of Democratic presidential candidates for president. George H. W. Bush in 1988 is the last Republican candidate to carry San Diego in a presidential election.

State and federal representation

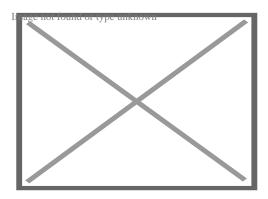[edit]

San Diego Hall of Justice in 2016

In the California State Senate, San Diego County encompasses the 38th, 39th and 40th districts,[189] represented by Catherine Blakespear (D), Akilah Weber (D), and Brian Jones (R), respectively.

In the California State Assembly, lying partially within the city of San Diego are the 77th, 78th, 79th, and 80th districts,[190] represented by Tasha Boerner (D), Chris Ward (D), LaShae Sharp–Collins (D), and David Alvarez (D), respectively.

In the United States House of Representatives, San Diego County includes parts or all of California's 48th, 49th, 50th, 51st, and 52nd congressional districts,[191] represented by Darrell Issa (R), Mike Levin (D), Scott Peters (D), Sara Jacobs (D), and Juan Vargas (D) respectively.
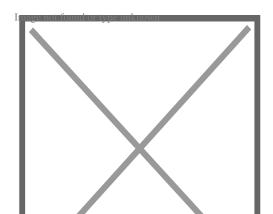
Scandals

Weinberger U.S. Courthouse

San Diego was the site of the 1912 San Diego free speech fight, in which the city restricted speech, vigilantes brutalized and tortured anarchists, and the San Diego Police Department killed a member of the Industrial Workers of the World (IWW).

In 1916, rainmaker Charles Hatfield was blamed for $4 million in damages and accused of causing San Diego's worst flood, during which about 20 Japanese American farmers died.[192]

Then-mayor Roger Hedgecock was forced to resign his post in 1985, after he was found guilty of one count of conspiracy and 12 counts of perjury, related to the alleged failure to report all campaign contributions.[193][194] After a series of appeals, the 12 perjury counts were dismissed in 1990 based on claims of juror misconduct; the remaining conspiracy count was reduced to a misdemeanor and then dismissed.[195]

A 2002 scheme to underfund pensions for city employees led to the San Diego pension scandal. This resulted in the resignation of newly re-elected Mayor Dick Murphy[196] and the criminal indictment of six pension board members.[197] Those charges were finally dismissed by a federal judge in 2010.[198]

Carter–Keep U.S. Courthouse

On November 28, 2005, U.S. Congressman Randy "Duke" Cunningham resigned after being convicted on federal bribery charges. He had represented California's 50th congressional district, which includes much of the northern portion of the city of San Diego. In 2006, Cunningham was sentenced to a 100-month prison sentence.[199]
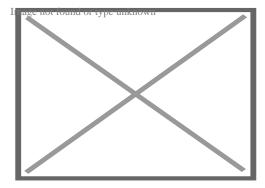
In 2005 two city council members, Ralph Inzunza and Deputy Mayor Michael Zucchet, were convicted of extortion, wire fraud, and conspiracy to commit wire fraud for taking campaign contributions from a strip club owner and his associates, allegedly in exchange for trying to repeal the city's "no touch" laws at strip clubs.[200] Both subsequently resigned. Inzunza was sentenced to 21 months in prison.[201] In 2009, a judge acquitted Zucchet on seven out of the nine counts against him, and granted his petition for a new trial on the other two charges;[202] the remaining charges were eventually dropped.[203]

In July 2013, three former supporters of Mayor Bob Filner asked him to resign because of allegations of repeated sexual harassment.[204] Over the ensuing six weeks, 18 women came forward to publicly claim that Filner had sexually harassed them,[205] and multiple individuals and groups called for him to resign. Filner agreed to resign effective August 30, 2013, subsequently pleading guilty to one felony count of false imprisonment and two misdemeanor battery charges.[206][207]

Crime

[edit]
Main article: Crime in San Diego

San Diego Police Department

Like most major cities, San Diego had a declining crime rate from 1990 to 2000. 1991 would mark the city's deadliest year, registering 179 homicides[208] within city limits (while the region as a whole peaked at 278 homicides),[209] capping off an unabated, eight-year climb in murders, rapes, robberies, and assault dating back to 1983. At the time, the city was ranked last among the 10 most populous U.S. cities in homicides per 1,000 population, and ninth in crimes per 1,000.[210] From 1980 to 1994, San Diego surpassed 100 murders ten times before tapering off to 91 homicides in 1995. That number would not exceed 79 for the next 15 years.[211] Crime in San Diego increased in the early 2000s.[212][213][214] In 2004, San Diego had the sixth lowest crime rate of any U.S. city with over half a million residents.[214] From 2002 to 2006, the crime rate overall dropped 0.8%, though not evenly by category. While violent crime decreased 12.4% during this period, property crime increased 1.1%. Total property crimes per 100,000 people were lower than the national average in 2008.[215]

According to Uniform Crime Report statistics compiled by the Federal Bureau of Investigation (FBI) in 2010, there were 5,616 violent crimes and 30,753 property crimes. Of these, the violent crimes consisted of forcible rapes, 73 robberies and 170 aggravated assaults, while 6,387 burglaries, 17,977 larceny-thefts, 6,389 motor vehicle thefts and 155 acts of arson defined the property offenses.[216] In 2013, San Diego had the lowest murder rate of the ten largest cities in the United States.[217]
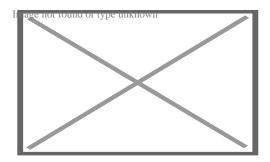
Education

[edit]

Primary and secondary schools

[edit]
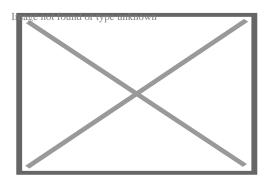
Main article: Primary and secondary schools in San Diego

The Bishop's School in La Jolla

Public schools in San Diego are operated by independent school districts. The majority of the public schools in the city are served by San Diego Unified School District, the second-largest school district in California, which includes 11 K–8 schools, 107 elementary schools, 24 middle schools, 13 atypical and alternative schools, 28 high schools, and 45 charter schools.[218]

Several adjacent school districts which are headquartered outside the city limits serve some schools within the city; these include Poway Unified School District, Del Mar Union School District, San Dieguito Union High School District, and Sweetwater Union High School District. In addition, there are a number of private schools in the city.

Colleges and universities

[edit]
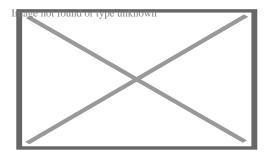
San Diego State University

According to education rankings released by the U.S. Census Bureau in 2017, 44.4% of San Diegans (city, not county) ages 25 and older hold bachelor's degrees, compared to 30.9% in the United States as a whole. Wallethub ranks San Diego as the 23rd-most educated city in the United States, based on these figures.[219]

The largest university in the area is the University of California, San Diego (UC San Diego). The university is the southernmost campus of the University of California system and is the second largest employer in the city. It has the seventh largest research expenditure in the country.[220]

Other public colleges and universities in the city include San Diego State University (SDSU) and the San Diego Community College District, which includes San Diego City College, San Diego Mesa College, and San Diego Miramar College.
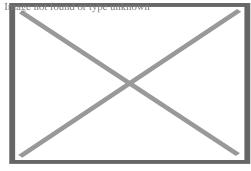
University of San Diego

Private non-profit colleges and universities in the city include the University of San Diego (USD), Point Loma Nazarene University (PLNU), National University's San Diego campus, University of Redlands' School of Business San Diego campus, and Brandman University's San Diego campus. For-profit institutions include Alliant International University (AIU), Fashion Institute of Design & Merchandising's San Diego campus, NewSchool of Architecture and Design, Southern States University (SSU), UEI College, and Woodbury University School of Architecture's satellite campus.

There is one medical school in the city, the UC San Diego School of Medicine. There are three ABA accredited law schools in the city, which include California Western School of Law, Thomas Jefferson School of Law, and University of San Diego School of Law. There is also one law school, Western Sierra Law School, not accredited by the ABA.

Libraries

[edit]

Geisel Library at UC San Diego

The city-run San Diego Public Library system is headquartered downtown and has 36 branches throughout the city.[221] The newest location is in Skyline Hills, which broke ground in 2015.[222] The libraries have had reduced operating hours since 2003 due to the city's financial problems. In 2006 the city increased spending on libraries by $2.1 million.[223] A new nine-story Central Library on Park Boulevard at J Street opened on September 30, 2013.[224]
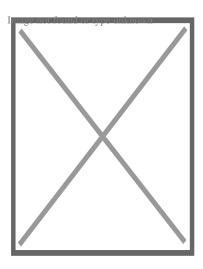
In addition to the municipal public library system, there are nearly two dozen libraries open to the public run by other governmental agencies, and by schools, colleges, and universities.[225] Noteworthy are Malcolm A. Love Library at San Diego State University, and Geisel Library at the University of California, San Diego.

Culture

[edit]

Main article: Culture of San Diego

See also: City of San Diego Commission for Arts and Culture
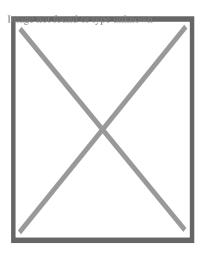
The Museum of Us

The culture of San Diego is influenced heavily by the mixing of American and Mexican cultures, due to the city's position on the Mexico–United States border, its large Chicano population, and its history as part of Hispanic America and Mexico. San Diego's longtime association with the U.S. military also contributes to its culture.

Many popular museums, such as the San Diego Museum of Art, the San Diego Natural History Museum, the Museum of Us, the Museum of Photographic Arts, and the San Diego Air & Space Museum, are located in Balboa Park, which is also the location of the

San Diego Zoo. The Museum of Contemporary Art San Diego (MCASD) is located in La Jolla and has a branch located at Santa Fe Depot downtown.

The San Diego Museum of Art
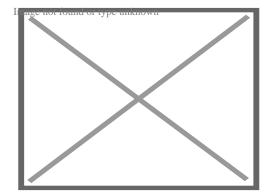
The Columbia district downtown is home to historic ship exhibits belonging to the Maritime Museum of San Diego, headlined by *Star of India*, as well as the unrelated USS *Midway* Museum featuring the USS *Midway* aircraft carrier.

The San Diego Symphony at Symphony Towers performs on a regular basis; from 2004 to 2017, its director was Jahja Ling. The San Diego Opera at Civic Center Plaza, directed by David Bennett. Old Globe Theatre at Balboa Park produces about 15 plays and musicals annually. La Jolla Playhouse at UC San Diego is directed by Christopher Ashley. Both the Old Globe Theatre and La Jolla Playhouse have produced the world premieres of plays and musicals that have gone on to win Tony Awards[226] or nominations[227] on Broadway. The Joan B. Kroc Theatre at Kroc Center's Performing Arts Center is a 600-seat state-of-the-art theater that hosts music, dance, and theater performances. Hundreds of movies and a dozen TV shows have been filmed in San Diego, a tradition going back as far as 1898.[228]

Sports

[edit]

Main article: Sports in San Diego

Petco Park, home of the San Diego Padres (MLB)

Sports in San Diego includes major professional league teams, other highest–level professional league teams, minor league teams, and college athletics. San Diego hosts three teams of major professional leagues, the San Diego Padres of Major League Baseball (MLB), San Diego FC of Major League Soccer (MLS), and San Diego Wave FC of National Women's Soccer League (NWSL).[229] The city is home to several universities whose teams compete in various NCAA Division I sports, most notably the San Diego State Aztecs. The Farmers Insurance Open, a professional golf tournament on the PGA Tour, is played annually at Torrey Pines Golf Course.

San Diego hosted the National Football League (NFL)'s San Diego Chargers from 1961 to 2017, when the team relocated to the Greater Los Angeles area (now the Los Angeles Chargers). The city also hosted the National Basketball Association (NBA)'s San Diego Rockets from 1967 to 1971 (now the Houston Rockets) and San Diego Clippers from 1978 to 1984 (now the Los Angeles Clippers). San Diego has never hosted a National Hockey League (NHL) franchise, though it hosted the San Diego Mariners of the now–defunct World Hockey Association (WHA) from 1974 to 1977.

Currently, there is no NBA, NFL, or NHL team in the city. San Diego is the largest American city not to have won a championship in a "Big Four"[a] major professional league. The city does have one major league title to its name: the 1963 American Football League (AFL) Championship won by the San Diego Chargers, when the AFL was an independent entity prior to the AFL–NFL merger in 1970. Some San Diego sports fans believe there is a curse on professional sports in the city.

The San Diego Clippers of the NBA G League have played at Frontwave Arena since 2024. The San Diego Seals of the National Lacrosse League play at Pechanga Arena.
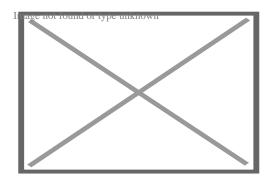
Media

[edit]

See also: Media in San Diego and List of media set in San Diego

Published within the city are the daily newspaper, *The San Diego Union-Tribune* and its online portal of the same name,[230] and the alternative newsweeklies, *San Diego CityBeat* and the *San Diego Reader*. The *Times of San Diego* is a free online newspaper

covering news in the metropolitan area. *Voice of San Diego* is a non-profit online news outlet covering government, politics, education, neighborhoods, and the arts. The *San Diego Daily Transcript* is a business-oriented online newspaper. San Diego is also the headquarters of the national far-right cable TV channel One America News Network (OANN).

San Diego led U.S. local markets with 69.6 percent broadband penetration in 2004 according to Nielsen//NetRatings.[231]

San Diego's first television station was KFMB, which began broadcasting on May 16, 1949.[232] Since the Federal Communications Commission (FCC) licensed seven television stations in Los Angeles, two VHF channels were available for San Diego because of its relative proximity to the larger city. In 1952, however, the FCC began licensing UHF channels, making it possible for cities such as San Diego to acquire more stations. Stations based in Mexico (with ITU prefixes of XE and XH) also serve the San Diego market. Television stations today include XHJK-TDT 1 (Azteca Uno), XETV-TDT 6 (Canal 5/Nueve), KFMB 8 (CBS, with The CW/MNTV on DT2), KGTV 10 (ABC), XHCPDE 11 (Once), XEWT 12 (Televisa Regional), KPBS 15 (PBS), KBNT-CD 17 (Univision), XHTIT-TDT 21 (Azteca 7), XHAS-TDT 33 (Canal 66), KDTF-LD 36 (Unimás), KNSD 39 (NBC), KSKT-CD 43 (Estrella TV), XHBJ-TDT 45 (Canal 45 PSN), KUAN-LD 48 (Telemundo), XHDTV-TDT 49 (Canal 6), KUSI 51 (Independent), XHUAA-TDT 57 (El Canal de las Estrellas), and KSWB-TV 69 (Fox). San Diego has an 80.6 percent cable penetration rate.[233]

San Diego Parade of Lights

Due to the ratio of U.S. and Mexican-licensed stations, San Diego is the largest media market in the United States that is legally unable to support a television station duopoly between two full-power stations under FCC regulations, which disallow duopolies in metropolitan areas with fewer than nine full-power television stations and require that there would be eight unique station owners that remain once a duopoly is formed (there are only seven full-power stations on the California side of the San Diego–Tijuana

market).[234] As a whole, the Mexico side of the San Diego–Tijuana market has two duopolies and one triopoly (Entravision Communications owns XHDTV-TV, Azteca owns XHJK-TV and XHTIT-TV, and Grupo Televisa owns XETV-TV, XHUAA-TV and XEWT-TV.

San Diego's television market is limited to only San Diego County. As a result, San Diego is the largest single-county media market in the United States.

The radio stations in San Diego include nationwide broadcaster iHeartMedia, Audacy, Inc., Local Media San Diego, and many other smaller stations and networks. Stations include: KOGO AM 600, KGB AM 760, KCEO AM 1000, KCBQ AM 1170, K-Praise, KLSD AM 1360, KFSD 1450 AM, KPBS-FM 89.5, Channel 933, Star 94.1, FM 94/9, FM News and Talk 95.7, Q96 96.1, KyXy 96.5, Free Radio San Diego (AKA Pirate Radio San Diego) 96.9FM FRSD, KWFN 97.3, KXSN 98.1, Big-FM 100.7, 101.5 KGB-FM, KLVJ 102.1, KSON 103.7, Rock 105.3, and another *Pirate Radio* station at 106.9FM, as well as a number of local Spanish-language radio stations.
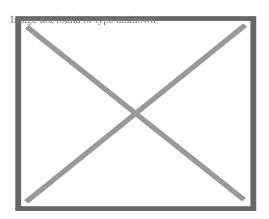
Infrastructure
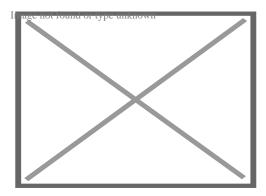
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Transportation

[edit]

Main articles: Transportation in San Diego and Streets and highways of San Diego

Santa Fe Depot is served by Amtrak California and Coaster trains.

With the automobile being the primary means of transportation for over 80 percent of residents, San Diego is served by a network of freeways and highways. This includes Interstate 5, which runs south to Tijuana and north to Los Angeles; Interstate 8, which runs east to Imperial County and the Arizona Sun Corridor; Interstate 15, which runs northeast through the Inland Empire to Las Vegas and Salt Lake City; and Interstate 805, which splits from I–5 near the Mexican border and rejoins I–5 at Sorrento Valley.

Major state highways include SR 94, which connects downtown with I–805, I–15 and East County; SR 163, which connects downtown with the northeast part of the city, intersects I–805 and merges with I–15 at Miramar; SR 52, which connects La Jolla with East County through Santee and SR 125; SR 56, which connects I–5 with I–15 through Carmel Valley and Rancho Peñasquitos; SR 75, which spans San Diego Bay as the San Diego–Coronado Bridge, and also passes through South San Diego as Palm Avenue; and SR 905, which connects I–5 and I–805 to the Otay Mesa Port of Entry.

San Diego Trolley is operated by the S.D. Metropolitan Transit System.
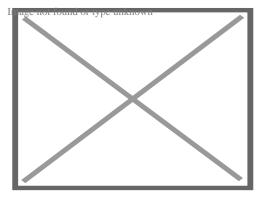
The stretch of SR 163 that passes through Balboa Park is San Diego's oldest freeway, dating back to 1948 when it was part of US 80 and US 395. It has been called one of America's most beautiful parkways.[235]

San Diego's roadway system provides an extensive network of cycle routes. Its dry and mild climate makes cycling a convenient year–round option; however, the city's hilly terrain and long average trip distances make cycling less practicable. Older and denser neighborhoods around the downtown tend to be oriented to utility cycling. This is partly because the grid street patterns are now absent in newer developments farther from the urban core, where suburban–style arterial roads are much more common. As a result, the majority of cycling is recreational.

The Cross Border Xpress, also known as the *Puerta de las Californias*, connects San Diego to Tijuana International Airport in Baja California.

San Diego is served by the San Diego Trolley light rail system,[236] by the MTS bus system,[237] the bus rapid transit system Rapid, private jitneys in some neighborhoods,[238] and by Coaster[239] and *Pacific Surfliner*[240] commuter rail; northern San Diego County is also served by the Sprinter hybrid rail service.[241] The trolley primarily serves downtown and surrounding urban communities, Mission Valley, east county, and coastal south bay. A mid-coast extension of the trolley operates from Old Town to University City and the University of California, San Diego along Interstate 5 since November 2021. The Amtrak and Coaster trains currently run along the coastline and connect San Diego with Los Angeles, Orange County, Riverside, San Bernardino, and Ventura via Metrolink and the Pacific Surfliner. There are two Amtrak stations in San Diego, in Old Town and Santa Fe Depot downtown. San Diego transit information about public transportation and commuting is available on the Web and by dialing "511" from any phone in the area.[242]

San Diego International Airport

The city has two major commercial airports within or near its city limits. San Diego International Airport (SAN) is the busiest single-runway airport in the United States.[243][244] It served over 24 million passengers in 2018 and is dealing with larger numbers every year.[245] Tijuana International Airport has a terminal within the city limits in the Otay Mesa district connected to the rest of the airport in Tijuana, Mexico, via the Cross Border Xpress cross-border footbridge. In addition, the city has two general-aviation airports, Montgomery–Gibbs Executive Airport (MYF) and Brown Field Municipal Airport (SDM).[246]

San Diego Bay Festival of Sail

Recent regional transportation projects have sought to mitigate congestion, including improvements to local freeways, expansion of San Diego Airport, and doubling the capacity of the cruise ship terminal. Freeway projects included expansion of Interstates 5 and 805 around "The Merge" where these two freeways meet, as well as expansion of Interstate 15 through North County, which includes new HOV "managed lanes". A tollway (the southern portion of SR 125, known as the South Bay Expressway) connects SR 54 and Otay Mesa, near the Mexican border. According to an assessment in 2007, 37 percent of city streets were in acceptable condition. However, the proposed budget fell $84.6 million short of bringing streets up to an acceptable level.[247] Expansion at the port has included a second cruise terminal on Broadway Pier, opened in 2010. Airport projects include the expansion of Terminal Two.[248]

Utilities

[edit]

Water is supplied to residents by the Water Department of the City of San Diego. The city receives most of its water from the Metropolitan Water District of Southern California, which brings water to the region from the Sacramento and San Joaquin rivers, via the state project and the Colorado River, via the Colorado Aqueduct.[249]

Gas and electric utilities are provided by San Diego Gas & Electric, a division of Sempra Energy.[*further explanation needed*] The company provides energy service to 3.7 million people through 1.5 million electric meters and 900,000 natural gas meters in San Diego and southern Orange counties.[250]

Street lights

[edit]

Street lights in the Gaslamp Quarter

In the mid-20th century the city had mercury vapor street lamps. In 1978, the city decided to replace them with more efficient sodium vapor lamps. This triggered an outcry from astronomers at Palomar Observatory 60 miles (100 km) north of the city, concerned that the new lamps would increase light pollution and hinder astronomical observation.[251] The city altered its lighting regulations to limit light pollution within 30 miles (50 km) of Palomar.[252]

In 2011, the city announced plans to upgrade 80% of its street lighting to new energy-efficient lights that use induction technology, a modified form of fluorescent lamp producing a broader spectrum than sodium vapor lamps. The new system is predicted to save $2.2 million per year in energy and maintenance.[253] In 2014, San Diego announced plans to become the first U.S. city to install cyber-controlled street lighting.[254]

Notable people

[edit]
Main article: List of people from San Diego

Sister cities

[edit]

San Diego's sister cities are:[255]

- Alcalá de Henares, Spain (est. 1982)
- Campinas, Brazil (est. 1995)
- Cavite City, Philippines (est. 1969)
- Edinburgh, Scotland (est. 1977)
- Jalalabad, Afghanistan (est. 2004)
- Jeonju, South Korea (est. 1983)
- León, Mexico (est. 1969)
- Panama City, Panama (est. 2015)
- Perth, Australia (est. 1986)
- Taichung, Taiwan (est. 1983)

- Tema, Ghana (est. 1976)
- Tijuana, Mexico (est. 1993)
- Vladivostok, Russia (est. 1991)
- Warsaw, Poland (est. 1996)
- Yantai, China (est. 1985)
- Yokohama, Japan (est. 1957)

See also

[edit]

- USS *San Diego*, 4 ships

Notes

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1. ^ MLB, NFL, NBA, and the NHL are commonly referred to as the "Big Four".

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- Quotations from Wikiquote
- Texts from Wikisource
- Textbooks from Wikibooks
- Resources from Wikiversity
- Travel information from Wikivoyage

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- Demographic Fact Sheet from Census Bureau
- San Diego Historical Society
- San Diego Unified School District
- San Diego Public Library

- San Diego Tourism Authority (formerly the San Diego Convention and Visitors Bureau)

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City of San Diego

By topic	Beaches	Seal of San Diego
	Climate	Image not found or type unknown
	Culture	
	Economy	
	companies	
	History (Timeline)	
	Media	
	Skyscrapers	
	Parks	
	People	
	Sports	

Government

- Mayor
- City Attorney
- City Council
- Libraries
- Port

Emergency services

- Hospitals
- Fire
- Police
  - crime

Transportation

- Airport
- Metropolitan Transit System
  - bus
  - trolley

Education

- List of primary and secondary schools
- San Diego USD
- Coronado USD
- Poway USD
- Escondido UHSD
- Grossmont UHSD
- San Dieguito UHSD
- Sweetwater UHSD
- Escondido Union ESD
- Del Mar Union ESD
- Lemon Grove ESD
- National ESD
- San Pasqual Union ESD
- San Ysidro ESD
- Santee SD
- Solana Beach ESD
- South Bay Union SD
- Valley Center–Pauma USD

- Universities and colleges

- Minato School (weekend Japanese school)

- San Diego County
- San Diego–Tijuana metropolitan area
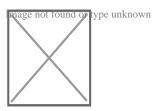
Articles relating to San Diego and San Diego County

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Municipalities and communities of San Diego County, California, United States

County seat: **San Diego**

Cities

- Carlsbad
- Chula Vista
- Coronado
- Del Mar
- El Cajon
- Encinitas
- Escondido
- Imperial Beach
- La Mesa
- Lemon Grove
- National City
- Oceanside
- Poway
- San Diego
- San Marcos
- Santee
- Solana Beach
- Vista

San Diego County map

CDPs

- Alpine
- Bonita
- Bonsall
- Borrego Springs
- Bostonia
- Boulevard
- Campo
- Camp Pendleton Mainside
- Camp Pendleton South
- Casa de Oro–Mount Helix
- Crest
- Del Dios
- Descanso
- Elfin Forest
- Eucalyptus Hills
- Fairbanks Ranch
- Fallbrook
- Granite Hills
- Harbison Canyon
- Harmony Grove
- Hidden Meadows
- Jacumba
- Jamul
- Julian
- Lake San Marcos
- Lakeside
- La Presa
- Mount Laguna
- Pala
- Pine Valley
- Potrero
- Rainbow
- Ramona
- Rancho San Diego
- Rancho Santa Fe
- San Diego Country Estates
- Spring Valley
- Valley Center

Unincorporated communities	4S Ranch - Ballena - Banner - Casa de Oro - Cuyamaca - Deerhorn Valley - De Luz - De Luz Heights - Dehesa - Dulzura - East Otay Mesa - Flinn Springs - Foster - Guatay - Jesmond Dene - Kentwood-In-The-Pines - Lincoln Acres - Manzanita - Oak Grove - Ocotillo Wells - Pala Mesa - Palomar Mountain - Pauma Valley - Pine Hills - Ranchita - Rincon - San Luis Rey - Santa Ysabel - Shelter Valley - Tecate - Warner Springs - Wynola

Indian reservations	- Barona Reservation - Campo Indian Reservation - Capitan Grande Reservation - Ewiiaapaayp Indian Reservation - Inaja and Cosmit Reservation - Jamul Indian Village - La Jolla Indian Reservation - La Posta Reservation - Los Coyotes Indian Reservation - Manzanita Reservation - Mesa Grande Reservation - Pala Indian Reservation - Pauma and Yuima Indian Reservation - Rincon Indian Reservation - San Pasqual Reservation - Santa Ysabel Reservation - Sycuan Band Reservation - Viejas Reservation
Ghost towns	- Banner City - Branson City - Coleman City - Cuyamaca City - Eastwood - Jofegan - Palm Spring Station - Panhe - San Felipe Station - San Pasqual - Stonewall - Stratton - Vallecito

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San Diego metropolitan area

County	
County	- San Diego

San Diego county satellite

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Cities

Major city
- San Diego

100k–300k
- Carlsbad
- Chula Vista
- El Cajon
- Escondido
- Oceanside

25k–100k
- Encinitas
- Imperial Beach
- La Mesa
- Lemon Grove
- National City
- San Marcos
- Santee
- Poway
- Vista

Under 25k
- Del Mar
- Coronado
- Solana Beach
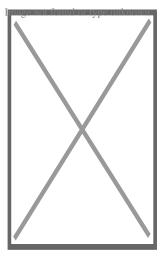
CDPs 20k+
- Fallbrook
- La Presa
- Lakeside
- Ramona
- Rancho San Diego
- Spring Valley
- Winter Gardens

Reservations	o Barona Reservation
	o Campo Indian Reservation
	o Capitan Grande Reservation
	o Ewiiaapaayp Reservation
	o Inaja and Cosmit Reservation
	o Jamul Indian Village
	o La Jolla Reservation
	o La Posta Indian Reservation
	o Los Coyotes Reservation
	o Manzanita Reservation
	o Mesa Grande Reservation
	o Pala Indian Reservation
	o Pauma and Yuima Reservation
	o Rincon Reservation
	o San Pasqual Reservation
	o Santa Ysabel Reservation
	o Sycuan Reservation
	o Viejas Reservation
Bodies of water	o Chollas Creek
	o Mission Bay
	o Otay River
	o San Diego Bay
	o San Diego River
	o San Luis Rey River
	o Santa Margarita River
	o San Mateo Creek (Southern California)
	o Sweetwater River
	o Tijuana River
Sub-regions	o East County
	o North County
	o City of San Diego
	o South Bay

Parks and monuments	o Agua Caliente
	o Anza–Borrego
	o Balboa Park
	o Border Field
	o Cabrillo Monument
	o Cleveland Forest
	o Cuyamaca
	o Old Town
	o Palomar Mountain
	o Torrey Pines
	o Wright's Field

History Culture Transportation (MTS NCTD Roads) Economy Education Government

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San Diego–Tijuana

- o **History**
- o **Geography**
- o **Geology**
- o **Populace**
- o **Economy**
- o **Transportation**
- o **Education**
- o **Communication**
- o **Border**
- o **Other infrastructure**
- o **Culture**

Counties and municipalities

- Rosarito
- San Diego
- Tecate
- Tijuana

Major cities

- San Diego
- Tijuana

**Cities
100k–250k**

- Carlsbad
- Chula Vista
- El Cajon
- Escondido
- Oceanside
- Vista

Cities and towns 20k–99k

- Coronado
- El Refugio
- Encinitas
- Fallbrook
- Imperial Beach
- La Joya
- La Mesa
- La Presa
- Lemon Grove
- National City
- Pórticos de San Antonio
- Poway
- Ramona
- Rancho San Diego
- Rosarito
- San Marcos
- Santee
- Spring Valley
- Tecate
- Terrazas del Valle

Cities and towns 10k–19k

- Alpine
- Bonita
- Bostonia
- Casa de Oro–Mount Helix
- Las Delicias
- San Diego Country Estates
- Solana Beach
- Villa del Campo
- Villa del Prado
- Winter Gardens

Bodies of water	- Agua Hedionda Lagoon - Batiquitos Lagoon - El Capitan Lake - Abelardo L. Rodriguez - Lake Hodges - Lake Sutherland - Lower Otay Reservoir - Loveland Reservoir - Mission Bay - Pacific Ocean - San Elijo Lagoon - San Diego Bay - San Vicente Reservoir - Sweetwater Reservoir - Tijuana River Estuary
Sub-regions	- Anza Borrego - Coronado Peninsula - Cuyamaca - East County - Mountain Empire - North County - Palm Valley - Playas de Rosarito - San Diego - South Bay - Tecate - Tijuana

- **Category**
- **Images**
- flag California portal *flag not found or type unknown*
- flag Mexico portal *flag not found or type unknown*

Southern Border Region

Counties	- San Diego - Imperial
Global city **1.4 million**	- San Diego
Major cities **100k–250k**	- Carlsbad - Chula Vista - El Cajon - Escondido - Oceanside - Vista
Cities and towns **25k–100k**	- Brawley - Calexico - El Centro - Encinitas - Fallbrook - Imperial Beach - La Mesa - La Presa - Lemon Grove - National City - Poway - San Marcos - Santee - Spring Valley
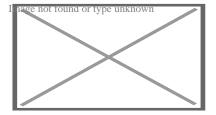
Cities and towns under 25k

- Alpine
- Bombay Beach
- Bonita
- Bonsall
- Borrego Springs
- Bostonia
- Boulevard
- Casa de Oro-Mount Helix
- Calipatria
- Campo
- Camp Pendleton North
- Camp Pendleton South
- Coronado
- Crest
- Del Mar
- Descanso
- Desert Shores
- Fairbanks Ranch
- Harbison Canyon
- Heber
- Hidden Meadows
- Holtville
- Imperial
- Jacumba Hot Springs
- Jamul
- Julian
- Lakeside
- Lake San Marcos
- Mount Laguna
- Niland
- Ocotillo
- Palo Verde
- Pine Valley
- Potrero
- Rainbow
- Ramona
- Rancho San Diego
- Rancho Santa Fe

Bodies of water	- Alamo River - Agua Hedionda Lagoon - Batiquitos Lagoon - Buena Vista Lagoon - Colorado River - Mission Bay - New River - Salton Sea - San Diego Bay - San Diego River - San Elijo Lagoon - San Luis Rey River - Santa Margarita River - Sweetwater River - Otay River - Tijuana River (Tijuana River Estuary)

Landforms

- Algodones Dunes
- Black Hills
- Black Mountain
- Blue Angels Peak
- Buena Vista Hills
- Cargo Muchacho Mountains (Pilot Knob)
- Chocolate Mountains
- Colorado Desert
- Cowles Mountain
- Coyote Mountain
- Coyote Mountains
- Cuyamaca Peak
- Double Peak
- Fish Creek Mountains
- Fletcher Hills
- Grapevine Hills
- Hot Springs Mountain
- In–Ko–Pah Mountains
- Jacumba Mountains
- Jamul Mountains
- Laguna Mountains
- Lake Cahuilla
- Little Mule Mountains
- Margarita Peak
- Merriam Mountains
- Mount Soledad
- Mud Caves
- North Pinyon Mountains
- Oakzanita Peak
- Oat Hills
- Palo Verde Mountains
- Palomar Mountain
- Palomar Mountain Range
- Pine Hills
- Pinyon Mountains
- Salton Buttes
- San Felipe Hills
- San Marcos Mountains

Regions

- North County
- Borrego
- South Bay
- East County
- San Diego
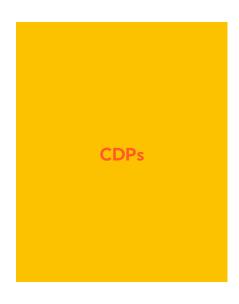- Imperial Valley
- Southern Border Region

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- **e**

California county seats

Consolidated city-county

- San Francisco

Municipalities

- Alturas
- Auburn
- Bakersfield
- Colusa
- Crescent City
- El Centro
- Eureka
- Fairfield
- Fresno
- Hanford
- Hollister
- Jackson
- Lakeport
- Los Angeles
- Madera
- Martinez
- Marysville
- Merced
- Modesto
- Napa
- Nevada City
- Oakland
- Oroville
- Placerville
- Red Bluff
- Redding
- Redwood City
- Riverside
- Sacramento
- Salinas
- San Bernardino
- San Diego
- San Jose
- San Luis Obispo
- San Rafael
- Santa Ana
- Santa Barbara
- Santa Cruz

CDPs	- Bridgeport - Downieville - Independence - Mariposa - Markleeville - Quincy - San Andreas - Weaverville

- **v**
- **t**
- **e**

State of California

Sacramento (capital)

Topics

Metro regions

- Fresno–Madera
- Los Angeles–Long Beach–Anaheim
- Sacramento–Roseville
- Riverside–San Bernardino–Ontario
- San Diego–Tijuana
- San Jose–San Francisco–Oakland

Counties

- Alameda
- Alpine
- Amador
- Butte
- Calaveras
- Colusa
- Contra Costa
- Del Norte
- El Dorado
- Fresno
- Glenn
- Humboldt
- Imperial
- Inyo
- Kern
- Kings
- Lake
- Lassen
- Los Angeles
- Madera
- Marin
- Mariposa
- Mendocino
- Merced
- Modoc
- Mono
- Monterey
- Napa
- Nevada
- Orange
- Placer
- Plumas
- Riverside
- Sacramento
- San Benito
- San Bernardino
- San Diego
- San Francisco

Most populous cities

- Los Angeles
- San Diego
- San Jose
- San Francisco
- Fresno
- Sacramento
- Long Beach
- Oakland
- Bakersfield
- Anaheim

California portal

flag

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Southern California megaregion
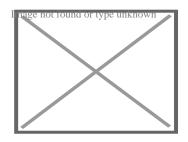
Metropolitan areas and cities in *italics* are located outside of California

Metropolitan Los Angeles	○ Major cities: Los Angeles ○ Long Beach ○ Anaheim ○ Santa Ana ○ Santa Clarita ○ Irvine ○ Glendale ○ Huntington Beach ○ Garden Grove
Inland Empire	○ Major cities: San Bernardino ○ Riverside ○ Fontana ○ Moreno Valley ○ Ontario ○ Rancho Cucamonga ○ Corona
San Diego– *Tijuana*	○ Major cities: San Diego ○ *Tijuana* ○ Chula Vista ○ Oceanside ○ Escondido ○ *Rosarito*
Central Coast	○ Major cities: Santa Barbara ○ Santa Maria ○ San Luis Obispo
Las Vegas Valley	○ Major cities: *Las Vegas* ○ *Henderson* ○ *North Las Vegas*

Megapolitan areas of California

- **v**
- **t**
- **e**

The 100 most populous cities of the United States

1. New York, New York
2. Los Angeles, California
3. Chicago, Illinois
4. Houston, Texas
5. Phoenix, Arizona
6. Philadelphia, Pennsylvania
7. San Antonio, Texas
8. Dallas, Texas
9. San Diego, California
10. Austin, Texas
11. Jacksonville, Florida
12. San Jose, California
13. Fort Worth, Texas
14. Columbus, Ohio
15. Charlotte, North Carolina
16. Indianapolis, Indiana
17. San Francisco, California
18. Seattle, Washington
19. Denver, Colorado
20. Oklahoma City, Oklahoma
21. Nashville, Tennessee
26. Portland, Oregon
27. Louisville, Kentucky
28. Memphis, Tennessee
29. Detroit, Michigan
30. Baltimore, Maryland
31. Milwaukee, Wisconsin
32. Albuquerque, New Mexico
33. Tucson, Arizona
34. Fresno, California
35. Sacramento, California
36. Mesa, Arizona
37. Kansas City, Missouri
38. Atlanta, Georgia
39. Colorado Springs, Colorado
40. Omaha, Nebraska
41. Raleigh, North Carolina
42. Virginia Beach, Virginia
43. Long Beach
51. Arlington, Texas
52. Aurora, Colorado
53. New Orleans, Louisiana
54. Cleveland, Ohio
55. Anaheim, California
56. Honolulu, Hawaii
57. Henderson, Nevada
58. Stockton, California
59. Riverside, California
60. Lexington, Kentucky
61. Corpus Christi, Texas
62. Orlando, Florida
63. Irvine, California
64. Cincinnati, Ohio
65. Santa Ana, California
66. Newark, New Jersey
67. Saint Paul, Minnesota
68. Pittsburgh, Pennsylvania
76. Chandler, Arizona
77. North Las Vegas, Nevada
78. Chula Vista, California
79. Buffalo, New York
80. Gilbert, Arizona
81. Reno, Nevada
82. Madison, Wisconsin
83. Fort Wayne, Indiana
84. Toledo, Ohio
85. Lubbock, Texas
86. St. Petersburg, Florida
87. Laredo, Texas
88. Irving, Texas
89. Chesapeake, Virginia
90. Glendale, Arizona
91. Winston–Salem, North Carolina
92. Scottsdale, Arizona
93. Garland, Texas

Cities ranked by United States Census Bureau population estimates for July 1, 2022.

Portals:

- Image not found or type unknown **North America**
- Image not found or type unknown **United States** flag
- Image not found or type unknown **California** flag
- Image not found or type unknown **Cities**

About Artificial turf

Artificial turf with rubber crumb infill

Side view of artificial turf

Diagram of the structure of modern artificial turf

Artificial turf square mats

Artificial turf is a surface of synthetic fibers made to look like natural grass, used in sports arenas, residential lawns and commercial applications that traditionally use grass. It is much more durable than grass and easily maintained without irrigation or trimming, although periodic cleaning is required. Stadiums that are substantially covered and/or at high latitudes often use artificial turf, as they typically lack enough sunlight for photosynthesis and substitutes for solar radiation are prohibitively expensive and energy-intensive. Disadvantages include increased risk of injury especially when used in athletic competition, as well as health and environmental concerns about the petroleum and toxic chemicals used in its manufacture.

Artificial turf first gained substantial attention in 1966, when ChemGrass was installed in the year-old Astrodome, developed by Monsanto and rebranded as AstroTurf, now a generic trademark (registered to a new owner) for any artificial turf.

The first-generation system of shortpile fibers without infill of the 1960s has largely been replaced by two more. The second features longer fibers and sand infill and the third adds recycled crumb rubber to the sand. Compared to earlier systems, modern artificial turf more closely resembles grass in appearance and is also considered safer for athletic 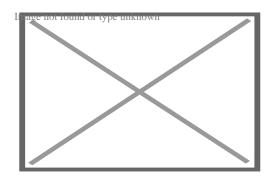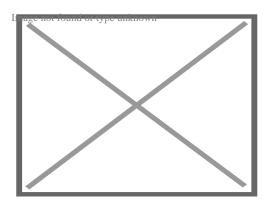competition. However, it is still not widely considered to be equal to grass. Sports clubs, leagues, unions and individual athletes have frequently spoken out and campaigned against it, while local governments have enacted and enforced laws restricting and/or banning its use.

History

[edit]

David Chaney, who moved to Raleigh, North Carolina, in 1960 and later served as Dean of the North Carolina State University College of Textiles, headed the team of Research Triangle Park researchers who created the first notable artificial turf. That accomplishment led *Sports Illustrated* to declare Chaney as the man "responsible for indoor major league baseball and millions of welcome mats."

Artificial turf was first installed in 1964 on a recreation area at the Moses Brown School in Providence, Rhode Island.[1] The material came to public prominence in 1966, when

AstroTurf was installed in the Astrodome in Houston, Texas.[1] The state-of-the-art indoor stadium had attempted to use natural grass during its initial season in 1965, but this failed miserably and the field conditions were grossly inadequate during the second half of the season, with the dead grass painted green. Due to a limited supply of the new artificial grass, only the infield was installed before the Houston Astros' home opener in April 1966; the outfield was installed in early summer during an extended Astros road trip and first used after the All-Star Break in July.
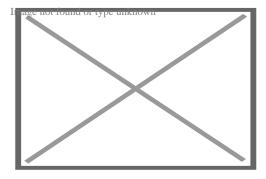
The use of AstroTurf and similar surfaces became widespread in the U.S. and Canada in the early 1970s, installed in both indoor and outdoor stadiums used for baseball and football. More than 11,000 artificial turf playing fields have been installed nationally.[2] More than 1,200 were installed in the U.S. in 2013 alone, according to the industry group the Synthetic Turf Council.[2]

Sports applications
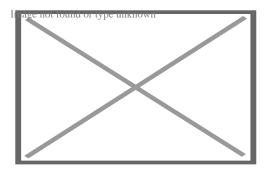
[edit]

Baseball

[edit]

Tropicana Field with its artificial turf field.
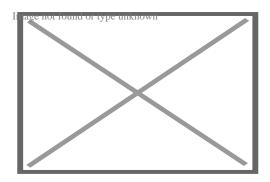
An artificial-turf field at a high school in Oregon.

Artificial turf was first used in Major League Baseball in the Houston Astrodome in 1966, replacing the grass field used when the stadium opened a year earlier. Even though the grass was specifically bred for indoor use, the dome's semi-transparent Lucite ceiling panels, which had been painted white to cut down on glare that bothered the players, did not pass enough sunlight to support the grass. For most of the 1965 season, the Astros played on green-painted dirt and dead grass.

The solution was to install a new type of artificial grass on the field, ChemGrass, which became known as AstroTurf. Given its early use, the term *astroturf* has since been genericized as a term for any artificial turf.[3] Because the supply of AstroTurf was still low, only a limited amount was available for the first home game. There was not enough for the entire outfield, but there was enough to cover the traditional grass portion of the infield. The outfield remained painted dirt until after the All-Star Break. The team was sent on an extended road trip before the break, and on July 19, 1966, the installation of the outfield portion of AstroTurf was completed.

The Chicago White Sox became the first team to install artificial turf in an outdoor stadium, as they used it only in the infield and adjacent foul territory at Comiskey Park from 1969 through 1975.[4] Artificial turf was later installed in other new multi-purpose stadiums such as Pittsburgh's Three Rivers Stadium, Philadelphia's Veterans Stadium, and Cincinnati's Riverfront Stadium. Early AstroTurf baseball fields used the traditional all-dirt path, but starting in 1970 with Cincinnati's Riverfront Stadium,[5] teams began using the "base cutout" layout on the diamond, with the only dirt being on the pitcher's mound, batter's circle, and in a five-sided diamond-shaped "sliding box" around each base. With this layout, a painted arc would indicate where the edge of the outfield grass would normally be, to assist fielders in positioning themselves properly. The last stadium in MLB to use this configuration was Rogers Centre in Toronto, when they switched to an all-dirt infield (but keeping the artificial turf) for the 2016 season.[6][7]

Artificial turf being installed on a baseball field in Queens, New York City.

The biggest difference in play on artificial turf was that the ball bounced higher than on real grass and also traveled faster, causing infielders to play farther back than they would normally so that they would have sufficient time to react. The ball also had a truer bounce than on grass so that on long throws fielders could deliberately bounce the ball in front of the player they were throwing to, with the certainty that it would travel in a straight line and not be deflected to the right or left. The biggest impact on the game of "turf", as it came to be called, was on the bodies of the players. The artificial surface, which was generally placed over a concrete base, had much less give to it than a traditional dirt and grass field did, which caused more wear-and-tear on knees, ankles, feet, and the lower back, possibly even shortening the careers of those players who played a significant portion of their games on artificial surfaces. Players also complained that the turf was much hotter than grass, sometimes causing the metal spikes to burn their feet or plastic ones to melt. These factors eventually provoked a number of stadiums, such as the Kansas City Royals' Kauffman Stadium, to switch from artificial turf back to natural grass.

In 2000, St. Petersburg's Tropicana Field became the first MLB field to use a third-generation artificial surface, FieldTurf. All other remaining artificial turf stadiums were either converted to third-generation surfaces or were replaced entirely by new natural grass stadiums. In a span of 13 years, between 1992 and 2005, the National League went from having half of its teams using artificial turf to all of them playing on natural grass. With the replacement of Minneapolis's Hubert H. Humphrey Metrodome by Target Field in 2010, only two MLB stadiums used artificial turf from 2010 through 2018: Tropicana Field and Toronto's Rogers Centre. This number grew to three when the Arizona Diamondbacks switched Chase Field to artificial turf for the 2019 season; the stadium had grass from its opening in 1998 until 2018, but the difficulty of maintaining the grass in the stadium, which has a retractable roof and is located in a desert city, was cited as the reason for the switch.[8] In 2020, Miami's Marlins Park (now loanDepot Park) also switched to artificial turf for similar reasons, while the Texas Rangers' new Globe Life Field was opened with an artificial surface, as it is also a retractable roof ballpark in a hot weather city; this puts the number of teams using synthetic turf in MLB at five as of 2023.

American football

The first professional American football team to play on artificial turf was the Houston Oilers, then part of the American Football League, who moved into the Astrodome in 1968, which had installed AstroTurf two years prior. In 1969, the University of Pennsylvania's Franklin Field in Philadelphia, at the time also home field of the Philadelphia Eagles, switched from grass to AstroTurf, making it the first National Football League stadium to use artificial turf.

In 2002, CenturyLink Field, originally planned to have a natural grass field, was instead surfaced with FieldTurf upon positive reaction from the Seattle Seahawks when they played on the surface at their temporary home of Husky Stadium during the 2000 and 2001 seasons. This would be the first of a leaguewide trend taking place over the next several seasons that would not only result in teams already using artificial surfaces for their fields switching to the new FieldTurf or other similar surfaces but would also see several teams playing on grass adopt a new surface. (The Indianapolis Colts' RCA Dome and the St. Louis Rams' Edward Jones Dome were the last two stadiums in the NFL to replace their first-generation AstroTurf surfaces for next-generation ones after the 2004 season). For example, after a three-year experiment with a natural surface, Giants Stadium went to FieldTurf for 2003, while M&T Bank Stadium added its own artificial surface the same year (it has since been removed and replaced with a natural surface, which the stadium had before installing the turf). Later examples include Paul Brown Stadium (now Paycor Stadium), which went from grass to turf in 2004; Gillette Stadium, which made the switch in 2006;[9] and NRG Stadium, which did so in 2015. As of 2021, 14 NFL fields out of 30 are artificial. NFL players overwhelmingly prefer natural grass over synthetic surfaces, according to a league survey conducted in 2010. When asked, "Which surface do you think is more likely to shorten your career?", 90% responded artificial turf.[10] When players were asked "Is the Turf versus Grass debate overblown or a real concern"[11] in an anonymous player survey, 83% believe it is a real concern while 12.3% believe it is overblown.

Following receiver Odell Beckham Jr.'s injury during Super Bowl LVI, other NFL players started calling for turf to be banned since the site of the game, SoFi Stadium, was a turf field.[12]

Arena football is played indoors on the older short-pile artificial turf.

Canadian football

[edit]

The first professional Canadian football stadium to use artificial turf was Empire Stadium in Vancouver, British Columbia, then home of the Canadian Football League's BC Lions, which installed 3M TartanTurf in 1970. Today, eight of the nine stadiums in the CFL currently use artificial turf, largely because of the harsh weather conditions in the latter-half of the season. The only one that does not is BMO Field in Toronto, which initially had an artificial pitch and has been shared by the CFL's Toronto Argonauts since 2016 (part of the endzones at that stadium are covered with artificial turf).[13] The first stadium to use the next-generation surface was Ottawa's Frank Clair Stadium (now TD Place Stadium), which the Ottawa Renegades used when they began play in 2002. The Saskatchewan Roughriders' Taylor Field was the only major professional sports venue in North America to use a second-generation artificial playing surface, Omniturf, which was used from 1988 to 2000, followed by AstroTurf from 2000 to 2007 and FieldTurf from 2007 to its 2016 closure.[14]

Cricket

[edit]

Some cricket pitches are made of synthetic grass[15] or of a hybrid of mostly natural and some artificial grass, with these "hybrid pitches" having been implemented across several parts of the United Kingdom[16] and Australia.[17] The first synthetic turf cricket field in the USA was opened in Fremont, California in 2016.[18]

Field hockey

Further information: Field hockey history § The synthetic revolution
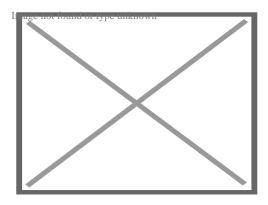
The introduction of synthetic surfaces has significantly changed the sport of field hockey. Since being introduced in the 1970s, competitions in western countries are now mostly played on artificial surfaces. This has increased the speed of the game considerably and changed the shape of hockey sticks to allow for different techniques, such as reverse stick trapping and hitting.

Field hockey artificial turf differs from artificial turf for other sports, in that it does not try to reproduce a grass feel, being made of shorter fibers. This allows the improvement in speed brought by earlier artificial turfs to be retained. This development is problematic for areas which cannot afford to build an extra artificial field for hockey alone. The International Hockey Federation and manufacturers are driving research in order to produce new fields that will be suitable for a variety of sports.
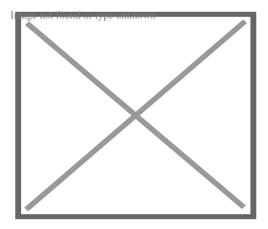
The use of artificial turf in conjunction with changes in the game's rules (e.g., the removal of offside, introduction of rolling substitutes and the self–pass, and to the interpretation of obstruction) have contributed significantly to change the nature of the game, greatly increasing the speed and intensity of play as well as placing far greater demands on the conditioning of the players.

Association football

Aspmyra, Norway: home of the football club FK Bodø/Glimt

A slide tackle driving up crumbed rubber in the playing surface

The use of artificial turf, and whether they are not allowed or not, varies between different tournaments and time periods. Though grass is preferred in general in association football, artificial turf is found in areas where it is seen as impractical to maintain natural grass season-long, with causes including very cold climates (For instance Norway's Eliteserien) or multi-purpose stadiums (Seattle's Lumen Field).

Use permitted

[edit]

- UEFA Champions League (2005–)
- UEFA Europa League (2005–)
- UEFA Conference League
- FIFA national team matches (200?–)
- UEFA national team matches (2005–)
- FA Cup
- Swiss Super League
- Allsvenskan
- Danish Superliga
- Eliteserien
- Veikkausliiga
- Meistriliiga
- Cymru Premier
- CONMEBOL tournaments[19]

- Campeonato Brasileiro Série A (2016–)
- Bolivian Primera División[19]
- Major League Soccer

Use prohibited

[edit]

- Football League First Division / Premier League (1991–)
- Football League tiers 2–4 (1995–)
- Indian Super League (2015–)
- Eredivisie (2025–)
- Scottish Premiership (2026–)[20]

History in United Kingdom

[edit]

Some association football clubs in Europe installed synthetic surfaces in the 1980s, which were called "plastic pitches" (often derisively) in countries such as England. There, four professional club venues had adopted them; Queens Park Rangers's Loftus Road (1981–1988), Luton Town's Kenilworth Road (1985–1991), Oldham Athletic's Boundary Park (1986–1991) and Preston North End's Deepdale (1986–1994). QPR had been the first team to install an artificial pitch at their stadium in 1981, but were the first to remove it when they did so in 1988.

Artificial pitches were banned from top-flight (then First Division) football in 1991, forcing Oldham Athletic to remove their artificial pitch after their promotion to the First Division in 1991, while then top-flight Luton Town also removed their artificial pitch at the same time. The last Football League team to have an artificial pitch in England was Preston North End, who removed their pitch in 1994 after eight years in use. Artificial pitches were banned from the top four divisions from 1995.

Artificial turf gained a bad reputation[neutrality is disputed] globally, with fans and especially with players. The first-generation artificial turf surfaces were carpet-like in their look and feel, and thus, a far harder surface than grass and soon became known[by whom

as an unforgiving playing surface that was prone to cause more [injuries](#), and in particular, more serious joint injuries, than would comparatively be suffered on a grass surface. This turf was also regarded as aesthetically unappealing to many fans[*weasel words*].

> In 1981, London football club [Queens Park Rangers](#) dug up its grass pitch and installed an artificial one. Others followed, and by the mid–1980s there were four artificial surfaces in operation in the English league. They soon became a national joke: the ball pinged round like it was made of rubber, the players kept losing their footing, and anyone who fell over risked carpet burns. Unsurprisingly, fans complained that the football was awful to watch and, one by one, the clubs returned to natural grass.[21]

In November 2011, it was reported that a number of English football clubs were interested in using artificial pitches again on economic grounds.[22] As of January 2020, artificial pitches are not permitted in the [Premier League](#) or [Football League](#) but are permitted in the [National League](#) and lower divisions. [Bromley](#) are an example of an English football club who currently use a third–generation artificial pitch.[23] In 2018, Sutton United were close to achieving promotion to the Football League and the debate in England about artificial pitches resurfaced again. It was reported that, if Sutton won promotion, they would subsequently be demoted two leagues if they refused to replace their pitch with natural grass.[24] After [Harrogate Town](#)'s promotion to the Football League in 2020, the club was obliged to install a natural grass pitch at [Wetherby Road](#);[25] and after winning promotion in 2021 Sutton Utd were also obliged to tear up their artificial pitch and replace it with grass, at a cost of more than £500,000.[26] Artificial pitches are permitted in all rounds of the [FA Cup](#) competition.

History elsewhere

[[edit](#)]

In the 1990s, many North American soccer clubs also removed their artificial surfaces and re–installed grass, while others moved to new stadiums with state–of–the–art grass surfaces that were designed to withstand cold temperatures where the climate demanded it. The use of artificial turf was later banned by [FIFA](#), [UEFA](#) and by many

domestic football associations, but FIFA and UEFA allowed it again from the mid-2000's (UEFA from the 2005–06 season onwards), provided that the turfs are FIFA Recommended. UEFA has now been heavily involved in programs to test artificial turf, with tests made in several grounds meeting with FIFA approval. A team of UEFA, FIFA and German company Polytan conducted tests in the Stadion Salzburg Wals–Siezenheim in Salzburg, Austria which had matches played on it in UEFA Euro 2008. It is the second FIFA 2 Star approved artificial turf in a European domestic top flight, after Dutch club Heracles Almelo received the FIFA certificate in August 2005.[27] The tests were approved.[28]

FIFA originally launched its FIFA Quality Concept in February 2001.

A full international fixture for the 2008 European Championships was played on October 17, 2007, between England and Russia on an artificial surface, which was installed to counteract adverse weather conditions, at the Luzhniki Stadium in Moscow.[29][30] It was one of the first full international games to be played on such a surface approved by FIFA and UEFA. The latter ordered the 2008 European Champions League final hosted in the same stadium in May 2008 to place on grass, so a temporary natural grass field was installed just for the final.

In 2007, UEFA stressed that artificial turf should only be considered an option where climatic conditions necessitate.[31] One Desso "hybrid grass" product incorporates both natural grass and artificial elements.[32]

In June 2009, following a match played at Estadio Ricardo Saprissa in Costa Rica, American national team manager Bob Bradley called on FIFA to "have some courage" and ban artificial surfaces.[33]

FIFA designated a star system for artificial turf fields that have undergone a series of tests that examine quality and performance based on a two star system.[34] Recommended two-star fields may be used for FIFA Final Round Competitions as well as for UEFA Europa League and Champions League matches.[35] There are currently 130 FIFA Recommended 2-Star installations in the world.[36]

In 2009, FIFA launched the Preferred Producer Initiative to improve the quality of artificial football turf at each stage of the life cycle (manufacturing, installation and maintenance).[37] Currently, there are five manufacturers that were selected by FIFA:

Act Global, Limonta, Desso, GreenFields, and Edel Grass. These firms have made quality guarantees directly to FIFA and have agreed to increased research and development.

In 2010, Estadio Omnilife with an artificial turf opened in Guadalajara to be the new home of Chivas, one of the most popular teams in Mexico. The owner of Chivas, Jorge Vergara, defended the reasoning behind using artificial turf because the stadium was designed to be "environment friendly and as such, having grass would result [in] using too much water."[38] Some players criticized the field, saying its harder surface caused many injuries. When Johan Cruyff became the adviser of the team, he recommended the switch to natural grass, which the team did in 2012.[39]

The 2015 FIFA Women's World Cup took place entirely on artificial surfaces, as the event was played in Canada, where almost all of the country's stadiums use artificial turf due to climate issues. This plan garnered criticism from players and fans, some believing the artificial surfaces make players more susceptible to injuries. Over fifty of the female athletes protested against the use of artificial turf on the basis of gender discrimination.[40][41] Australia winger Caitlin Foord said that after playing 90 minutes there was no difference to her post-match recovery – a view shared by the rest of the squad. The squad spent much time preparing on the surface and had no problems with its use in Winnipeg. "We've been training on [artificial] turf pretty much all year so I think we're kind of used to it in that way ... I think grass or turf you can still pull up sore after a game so it's definitely about getting the recovery in and getting it right", Foord said.[42] A lawsuit was filed on October 1, 2014, in an Ontario tribunal court by a group of women's international soccer players against FIFA and the Canadian Soccer Association and specifically points out that in 1994 FIFA spent $2 million to plant natural grass over artificial turf in New Jersey and Detroit.[43] Various celebrities showed their support for the women soccer players in defense of their lawsuit, including actor Tom Hanks, NBA player Kobe Bryant and U.S. men's soccer team keeper Tim Howard. Even with the possibility of boycotts, FIFA's head of women's competitions, Tatjana Haenni, made it clear that "we play on artificial turf and there's no Plan B."[44][45]

The first stadium to use artificial turf in Brazil was Atlético Paranaense's Arena da Baixada in 2016. In 2020, the administration of Allianz Parque, home of Sociedade Esportiva Palmeiras, started the implementation of the second artificial pitch in the country.[46]

In 2024, the Eredivisie banned artificial turfs, meaning hybrid grass and natural grass became mandatory, starting from the 2025–26 season.[47]

In UEFA tournaments, teams who are used to playing on artificial turf are seen as having a large home advantage against teams who don't, as was the case for Bodø/Glimt's semi-final campaign in the 2025–26 UEFA Europa League.[48]

Rugby union

[edit]

Rugby union also uses artificial surfaces at a professional level. Infill fields are used by English Premiership Rugby teams Gloucester, Newcastle Falcons, Saracens F.C. and the now defunct Worcester Warriors, as well as United Rugby Championship teams Cardiff, Edinburgh and Glasgow Warriors. Some fields, including Twickenham Stadium, have incorporated a hybrid field, with grass and synthetic fibers used on the surface. This allows for the field to be much more hard wearing, making it less susceptible to weather conditions and frequent use.

Tennis

[edit]
Main article: Tennis court

Carpet has been used as a surface for indoor tennis courts for decades, though the first carpets used were more similar to home carpets than a synthetic grass. After the introduction of AstroTurf, it came to be used for tennis courts, both indoor and outdoor, though only a small minority of courts use the surface.[49][50] Both infill and non-infill versions are used, and are typically considered medium-fast to fast surfaces under the International Tennis Federation's classification scheme.[49] A distinct form found in tennis is an "artificial clay" surface,[49] which seeks to simulate a clay court by using a very short pile carpet with an infill of the same loose aggregate used for clay courts that rises above the carpet fibers.[49]

Tennis courts such as Wimbledon are considering using an artificial hybrid grass to replace their natural lawn courts. Such systems incorporate synthetic fibers into natural grass to create a more durable surface on which to play.[51] Such hybrid surfaces are currently used for some association football stadiums, including Wembley Stadium.

Golf

[edit]

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Synthetic turf can also be used in the golf industry, such as on driving ranges, putting greens and even in some circumstances tee boxes. For low budget courses, particularly those catering to casual golfers, synthetic putting greens offer the advantage of being a relatively cheap alternative to installing and maintaining grass greens, but are much more similar to real grass in appearance and feel compared to sand greens which are the traditional alternative surface. Because of the vast areas of golf courses and the damage from clubs during shots, it is not feasible to surface fairways with artificial turf.

Motor racing

[edit]
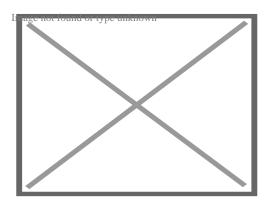
Artificial grass is used to line the perimeter of some sections of some motor circuits, and offers less grip than some other surfaces.[52] It can pose an obstacle to drivers if it gets caught on their car.[53]

Other applications

[edit]

Landscaping

A home's yard with artificial grass.

Since the early 1990s, the use of synthetic grass in the more arid western states of the United States has moved beyond athletic fields to residential and commercial landscaping.[54] New water saving programs, as of 2019, which grant rebates for turf removal, do not accept artificial turf as replacement and require a minimum of plants.[55][56]

The use of artificial grass for convenience sometimes faces opposition: Legislation frequently seeks to preserve natural gardens and fully water permeable surfaces, therefore restricting the use of hardscape and plantless areas, including artificial turf. In several locations in different countries, homeowners have been fined, ordered to remove artificial turf and/or had to defend themselves in courts. Many of these restrictions can be found in local bylaws and ordinances. These not always applied in a consistent manner,[57][58][59] especially in municipalities that utilize a complaint-based model for enforcing local laws.

Sunlight reflections from nearby windows can cause artificial turf to melt. This can be avoided by adding perforated vinyl privacy window film adhesive to the outside of the window causing the reflection.

Airports

Artificial turf has been used at airports.[60] Here it provides several advantages over natural turf – it does not support wildlife, it has high visual contrast with runways in all seasons, it reduces foreign object damage (FOD) since the surface has no rocks or clumps, and it drains well.[61]

Some artificial turf systems allow for the integration of fiber-optic fibers into the turf. This would allow for runway lighting to be embedded in artificial landing surfaces for aircraft (or lighting or advertisements to be directly embedded in a playing surface).[62]

Tanks for octopuses

Artificial turf is commonly used for tanks containing octopusses, in particular the Giant Pacific octopus since it is a reliable way to prevent the octopusses from escaping their tank, as they prevent the suction cups on the tentacles from getting a tight seal.[63]

Environmental and safety concerns

Environmental footprint

The first major academic review of the environmental and health risks and benefits of artificial turf was published in 2014;[64] it was followed by extensive research on possible risks to human health, but holistic analyses of the environmental footprint of artificial turf compared with natural turf only began to emerge in the 2020s,[65][66] and

frameworks to support informed policymaking were still lacking.[67][68] Evaluating the relative environmental footprints of natural and artificial turf is complex, with outcomes depending on a wide range of factors, including (to give the example of a sports field):[64]

- what ecosystem services are lost by converting a site to a sports pitch
- how resource-intensive is the landscaping work and transport of materials to create a pitch
- whether input materials are recycled and whether these are recycled again at the end of the pitch's life
- how resource-intensive and damaging maintenance is (whether through water, fertiliser, weed-killer, reapplication of rubber crumb, snow-clearing, etc.)
- how intensively the facility is used, for how long, and whether surface type can reduce the overall number of pitches required

Artificial turf has been shown to contribute to global warming by absorbing significantly more radiation than living turf and, to a lesser extent, by displacing living plants that could sequester carbon dioxide through photosynthesis;[69] a study at New Mexico State University found that in that environment, water-cooling of artificial turf can demand as much water as natural turf.[70] However, a 2022 study that used real-world data to model a ten-year-life-cycle environmental footprint for a new natural-turf soccer field compared with an artificial-turf field found that the natural-turf field contributed twice as much to global warming as the artificial one (largely due to a more resource-intensive construction phase), while finding that the artificial turf would likely cause more pollution of other kinds. It promoted improvements to usual practice such as the substitution of cork for rubber in artificial pitches and more drought-resistant grasses and electric mowing in natural ones.[65] In 2021, a Zurich University of Applied Sciences study for the city of Zurich, using local data on extant pitches, found that, per hour of use, natural turf had the lowest environmental footprint, followed by artificial turf with no infill, and then artificial turf using an infill (e.g. granulated rubber). However, because it could tolerate more hours of use, unfilled artificial turf often had the lowest environmental footprint in practice, by reducing the total number of pitches required. The study recommended optimising the use of existing pitches before building new ones, and choosing the best surface for the likely intensity of use.[66] Another suggestion is the introduction of green roofs to offset the conversion of grassland to artificial turf.[71]

Maintenance

Contrary to popular belief, artificial turf is not maintenance free. It requires regular maintenance, such as raking and patching, to keep it functional and safe.[72]

Pollution and associated health risks

Further information: Artificial turf–cancer hypothesis

Some artificial turf uses infill such as silicon sand, but most uses granulated rubber, referred to as "crumb rubber". Granulated rubber can be made from recycled car tires and may carry heavy metals, PFAS chemicals, and other chemicals of environmental concern. The synthetic fibers of artificial turf are also subject to degradation. Thus chemicals from artificial turfs leach into the environment, and artificial turf is a source of microplastics pollution and rubber pollution in air, fresh-water, sea and soil environments.[73][74][75][76][77][78][64][*excessive citations*] In Norway, Sweden, and at least some other places, the rubber granulate from artificial turf infill constitutes the second largest source of microplastics in the environment after the tire and road wear particles that make up a large portion of the fine road debris.[79][80][81] As early as 2007, Environment and Human Health, Inc., a lobby-group, proposed a moratorium on the use of ground-up rubber tires in fields and playgrounds based on health concerns;[82] in September 2022, the European Commission made a draft proposal to restrict the use of microplastic granules as infill in sports fields.[83]

What is less clear is how likely this pollution is in practice to harm humans or other organisms and whether these environmental costs outweigh the benefits of artificial turf, with many scientific papers and government agencies (such as the United States Environmental Protection Agency) calling for more research.[2] A 2018 study published in *Water, Air, & Soil Pollution* analyzed the chemicals found in samples of tire crumbs, some used to install school athletic fields, and identified 92 chemicals only about half of

which had ever been studied for their health effects and some of which are known to be carcinogenic or irritants. It stated "caution would argue against use of these materials where human exposure is likely, and this is especially true for playgrounds and athletic playing fields where young people may be affected".[84] Conversely, a 2017 study in *Sports Medicine* argued that "regular physical activity during adolescence and early adulthood helps prevent cancer later in life. Restricting the use or availability of all-weather year-round synthetic fields and thereby potentially reducing exercise could, in the long run, actually increase cancer incidence, as well as cardiovascular disease and other chronic illnesses."[85]

The possibility that carcinogenic substances in artificial turf could increase risks of human cancer (the artificial turf–cancer hypothesis) gained a particularly high profile in the first decades of the twenty-first century and attracted extensive study, with scientific reports around 2020 finding cancer-risks in modern artificial turf negligible.[86][87][88][89] But concerns have extended to other human-health risks, such as endocrine disruption that might affect early puberty, obesity, and children's attention spans.[90][91][92][93] Potential harm to fish[75] and earthworm[94] populations has also been shown.

A study for the New Jersey Department of Environmental Protection analyzed lead and other metals in dust kicked into the air by physical activity on five artificial turf fields. The results suggest that even low levels of activity on the field can cause particulate matter containing these chemicals to get into the air where it can be inhaled and be harmful. The authors state that since no level of lead exposure is considered safe for children, "only a comprehensive mandated testing of fields can provide assurance that no health hazard on these fields exists from lead or other metals used in their construction and maintenance."[95]

Kinesiological health risks

[edit]

A number of health and safety concerns have been raised about artificial turf.[2] Friction between skin and older generations of artificial turf can cause abrasions and/or burns to a much greater extent than natural grass.[96] Artificial turf tends to retain heat

from the sun and can be much hotter than natural grass with prolonged exposure to the sun.[97]

There is some evidence that periodic disinfection of artificial turf is required as pathogens are not broken down by natural processes in the same manner as natural grass. Despite this, a 2006 study suggests certain microbial life is less active in artificial turf.[96]

There is evidence showing higher rates of player injury on artificial turf. By November 1971, the injury toll on first-generation artificial turf had reached a threshold that resulted in congressional hearings by the House subcommittee on commerce and finance.[98][99][100] In a study performed by the National Football League Injury and Safety Panel, published in the October 2012 issue of the *American Journal of Sports Medicine*, Elliott B. Hershman et al. reviewed injury data from NFL games played between 2000 and 2009, finding that "the injury rate of knee sprains as a whole was 22% higher on FieldTurf than on natural grass. While MCL sprains did not occur at a rate significantly higher than on grass, rates of ACL sprains were 67% higher on FieldTurf."[101] Metatarsophalangeal joint sprain, known as "turf toe" when the big toe is involved, is named from the injury being associated with playing sports on rigid surfaces such as artificial turf and is a fairly common injury among professional American football players. Artificial turf is a harder surface than grass and does not have much "give" when forces are placed on it.[102]

See also

[edit]

- International Association for Sports Surface Sciences
- List of college football stadiums with non-traditional field colors
- Poly-Turf
- The Flying Grass Carpet

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