

TODOS SANTOS AND EL PESCADERO:

SOCIO-DEMOGRAPHIC AND ENVIRONMENTAL OVERVIEW

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PREFACE

This report was commissioned by the Colorado State University Todos Santos Center. The aim of this report is to provide base-line information on socio-demographic and environmental aspects of Todos Santos and El Pescadero regions in Baja California Sur, Mexico.

The CSU Todos Santos Center campus is located in the town of Todos Santos, Baja California Sur. El Pescadero, a rural village nearby is strongly connected to Todos Santos, and therefore both localities were considered as the focus regions for the present report.

The information provided here in addition to the community-based participatory research conducted by the CSU Todos Santos Center, will contribute to the process of identifying the principle priorities and challenges that the communities in the focus regions are facing. In turn, this will help prioritize research and educational programs that the CSU Todos Santos Center could offer to the CSU and local communities.

The sources of the present information were derived mainly from published documents, national public databases (i.e. The National Institute of Statistics and Geography *INEGI*), and in some cases, through official information requests to regional governmental institutions. A major source of information is the “sub-regional Program for Urban Development in Todos Santos – El Pescadero – Las Playitas” developed by the Center of Urban Studies and Architecture *CEURA*, and published at the Official Bulletin of the Government of the State of Baja California Sur in 2012. All the information provided here is referenced appropriately and open to the general public. There are no personal opinions or communications included in this report.

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1. CONTEXT

1.1 The State of BAJA CALIFORNIA SUR

Baja California Sur (BCS) represents one of thirty-two federal entities in Mexico. Baja California Sur is located in the Northwest region of the Mexican Republic and represents half of the Baja California Peninsula ($28^{\circ}16'-22^{\circ} 33' N$; $109^{\circ}22'-115^{\circ}4' W$)¹. It covers a total area of 73,677 km² (3.7 % of the national territory) and 2,705 km coastline including the Gulf of California and the Pacific Ocean (23% of the nation's coastline and the largest littoral zone extension in the country)². BCS is bordered by Baja California to the north, Gulf of California to the east, and Pacific Ocean to the south and west (figure 1). The vast extension of territorial waters, including both the Pacific Coast and Gulf of California, makes BCS the country's region for the highest fishing potential, estimated at 700,000 tons annually².



Fig. 1. Location of Baja California Sur (Source: Instituto Nacional de Estadística y Geografía (INEGI) <http://cuentame.inegi.org.mx/>).

Climate. Baja California Sur is characterized by a desert or arid climate, (BW, according to the Köppen climate classification). The climate ranges are very dry (92%), dry and semi-dry (7%), temperate sub-humid (1%). The highest average temperature is 35°C (95°F) during July and August while the lowest average temperature is 9°C (48°F) during January. The mean annual temperature ranges from 18°C (64°F) to 22°C (72°F) along the coastline. Precipitation is very scarce and present primarily during the summer season. The mean annual precipitation is less than 200 mm. Precipitation patterns are occasionally modified by hurricanes. There is natural water scarcity in the region².

Demography. The total population size of BCS is 637,026 inhabitants (including 311,593 women and 325,433 men) mostly distributed in urban (86%) compared to rural (14%) areas. The regional population size corresponds to 0.6% of the national population¹. Baja California Sur has the lowest population density per km² within the country (almost 9 people per km²) but it also has the highest mean annual population growth rate (3.6% in 2000-2005) after Quintana Roo state². The total regional population size has doubled during the last 25 years (Table 4). The national immigrant population represented more than 10% of BCS resident population in 2000. This proportion has slightly grown over time². By 2010, a total of 73,920 national immigrants arrived to Baja California Sur coming originally from Sonora, Guerrero, Baja California, Mexico City and Jalisco³. The number of immigrants and emigrants registered per municipality in Baja California Sur during 2010 and 2011 is shown in Table 6.

Economy. The main industry in Baja California Sur is derived from tertiary economic activities (defined as activities involving the exchange of products derived from secondary activities including commerce, services and transportation according to INEGI), mostly tourism-related activities (i.e. trade, lodging services, food and drink services), representing 69% of the annual gross domestic product in the state¹. This is followed by secondary (defined as activities involving transformation of raw materials derived from primary activities including construction and manufacturing industry according to INEGI) and primary (defined as activities involving the use of natural resources including agriculture, farming, forestry, fishing and mining according to INEGI) economic activities representing, respectively, 26.61% and 3.89% of the annual gross domestic product in the state¹. The economic structure of the different economic sectors in Baja California Sur is shown in Table 7.

Baja California Sur is acknowledged for having the highest number of research institutions focused on marine sciences within Latin America; the cleanest coastal waters in the country as revealed by diverse, systematic water quality monitoring; 224,00 hectares of coastal lagoons, bays and estuaries; fisheries such as squid, lobster and aquaculture; organic agriculture development; salt exploitation; a leader position in gypsum productioner within the national mining sector; and enjoys and a privileged natural environment².

More detailed information on the socio-demographic indicators in Baja California Sur can be found in Annex I.

1.2 BAJA CALIFORNIA SUR MUNICIPALITIES

Baja California Sur is administratively structured in five municipalities: Mulegé, Comondú, Loreto, La Paz, and Los Cabos (figure 2) including a municipal seat per municipality (Table 1). Mulegé covers the largest area while Los Cabos covers the smallest area (Table 1).

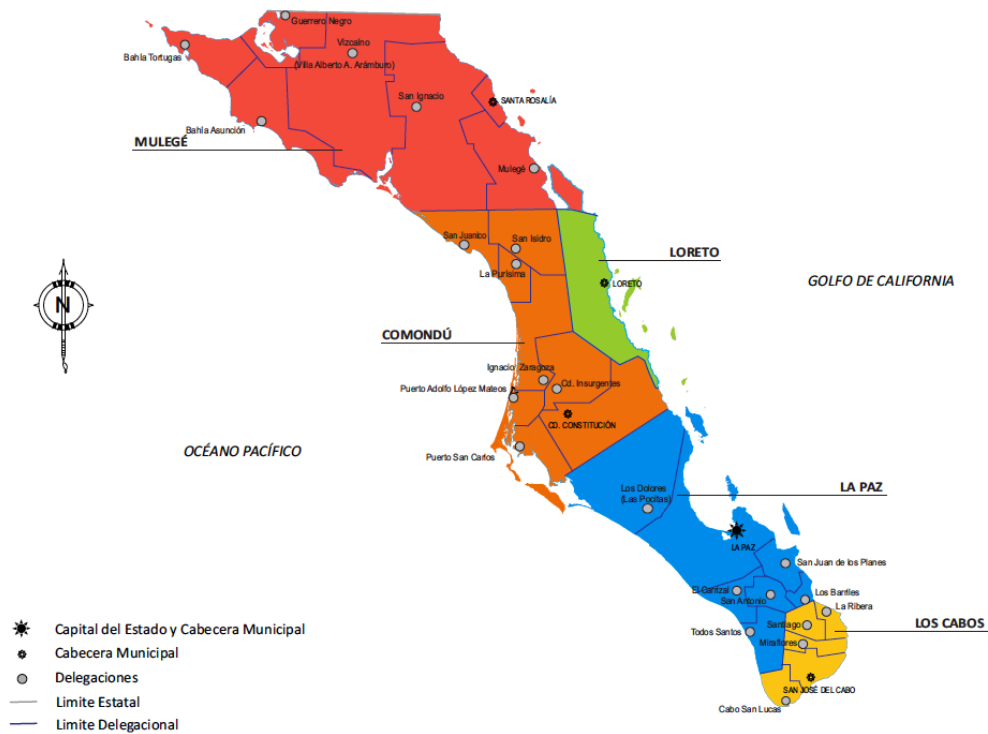


Fig. 2. Municipality and Boroughs division in Baja California Sur. (Source: Datos básicos de Baja California Sur 2012. Gobierno del Estado de Baja California Sur, Secretaría de Promoción y Desarrollo Económico, y Dirección de Informática y Estadística⁴).

Table 1. Municipality division of Baja California Sur

Municipality	Municipal Seat	Area (km ²)
Mulegé	Santa Rosalía	33,092.21
Comondú	Cd. Constitución	12,547.30
Loreto	Loreto	4,311
La Paz	La Paz	20,274.98
Los Cabos	San José del Cabo	3,451.51
BCS		73,677.00

Source: Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

The number of boroughs (delegación) and sub-boroughs (sub-delegación) within each municipality in Baja California Sur is shown in Table 2. Municipalities (municipios) represent the second-level administrative division and are responsible for public services. Each municipality is administratively autonomous. The citizens elect a municipal president who heads a municipal council (Ayuntamiento). The municipal council consists of a chairman (cabildo) with a syndic and several trustees (regidores). If the municipality covers several towns or localities, a single one is elected as a seat of the municipal government (cabecera municipal) while the rest elect representatives to an auxiliary presidency or council (junta auxiliar). Boroughs (delegaciones) represent the third-level administrative division and in

some cases they pertain to the urbanized areas of the municipality. Boroughs are sub-divided into sub-boroughs that are comprised by small populations from different localities.

Table 2. Number of boroughs, sub-boroughs and localities per municipality

Municipality	No. Borough	No. Sub-borough	No. Localities
Mulegé	6	28	459
Comondú	7	32	651
Loreto	0	8	147
La Paz	6	49	1,044
Los Cabos	4	51	549
BCS	23	168	2,850

No. refers to number. Source: XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Total population size, including urban and rural, per municipality in Baja California Sur is shown in Table 3. La Paz represents the most populous municipality, reaching a total population size of 251,871 inhabitants followed by Los Cabos reaching a total population size of 238,487 inhabitants³.

Table 3. Population size per municipality in Baja California Sur

Municipality	Population size (number of inhabitants)			
	Total	Urban	Rural	Density (people/km ²)
Mulegé	59,114	38,213	20,901	1.8
Comondú	70,816	55,214	15,602	3.9
Loreto	16,738	1,556	2,014	3.8
La Paz	251,871	225,022	26,849	16.3
Los Cabos	238,487	215,545	22,942	63.6
BCS	637,026	548,718	88,308	8.6

Source: XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

The distribution of the population per municipality in Baja California Sur over the last 25 years is shown in Table 4. The highest population growth rate is observed in Los Cabos municipality, where a two-fold increase in population size was shown in a ten-year period (2000-2010).

Table 4. Population distribution per municipality in Baja California Sur

Municipality	Population size (number of inhabitants)				
	1990	1995	2000	2005	2010
Mulegé	38,528	45,963	45,989	52,743	59,114
Comondú	74,346	66,096	63,864	63,830	70,816
Loreto	n.a.	9,986	11,812	11,839	16,738
La Paz	160,970	182,418	196,907	219,596	251,871
Los Cabos	43,920	71,031	105,469	164,162	238,487
BCS	317,764	375,494	424,041	512,170	637,026

n.a. refers to not available data. Source: XI, XII Y XIII Censo General de Población y Vivienda 1990, 2000 y 2010; Conteo de Población y Vivienda 1995, 2005. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Changes in the population structure of the municipalities are derived from changes in birth and fecundity rates of the population, but the largest changes are attributed to the population flow and migration patterns. During 2005, 9.8% of the resident population in Baja California Sur was considered as recent immigrants for being arrived during the last five years². According to CONAPO (“Consejo Nacional de Población”). In general, the extent of migration intensity within the state is considered as relatively low compared to the national, the La Paz municipality in particular is considered very low (Table 5). The number of immigrants and emigrants registered per municipality in Baja California Sur in 2010 and 2011 is show in Table 6.

Table 5. Index and extent of migration intensity in Baja California Sur

Municipality	Index of migration intensity	Extent of migration intensity
Mulegé	-0.69398	Very low
Comondú	-0.40418	Low
Loreto	-0.78305	Very low
La Paz	-0.70632	Very low
Los Cabos	-0.54660	Low
BCS	-0.86423	Low

Source: Values estimated from Consejo Nacional de Población CONAPO, based on XII Censo General de Población y Vivienda 2000, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Table 6. Number of immigrants and emigrants registered per municipality in Baja California Sur (2010, 2011)

Municipality	Number of Immigrants and Emigrants			
	2010		2011	
	Immigrants	Emigrants	Immigrants	Emigrants
Mulegé	0	0	0	0
Comondú	0	0	0	0
Loreto	249	231	273	398
La Paz	136	120	140	98
Los Cabos	4,307	3,884	5,548	4,541
BCS	4,692	4,235	5,961	5,037

Source: Instituto Nacional de Migración (INM) in: Datos básicos de Baja California Sur 2012. Gobierno del Estado de Baja California Sur, Secretaría de Promoción y Desarrollo Económico, y Dirección de Informática y Estadística.

The municipalities of La Paz (home of the State Capital) followed by Los Cabos (main tourism region) show the most economically active populations within Baja California Sur focused mainly on tertiary economic activities (i.e. trade, lodging and food/drinks services)^{1,2}. The economic structure of the different sectors in Baja California Sur is shown in Table 7.

Table 7. The economic structure at different sectors in Baja California Sur

	Sector	Economic units	Total Nat. (%)	No. of workers	Total Nat. (%)
	Total of the sectors	28,114	0.7	156,985	0.7
Primary	Agriculture, farming, forestry, fisheries and hunting	678	3.3	7,066	3.7
Secondary	Mining	24	0.8	3,836	2.3
	Electricity water and gas	5	0.2	1,552	0.7
	Construction	222	1.3	4,886	0.9
	Manufacturing	2,558	0.5	11,067	0.2
Tertiary	Trade	11,377	0.6	47,488	0.7
	Transportation and Storage	387	2.2	5,740	0.7
	Financial services and insurance	199	0.8	690	0.1
	Private non-financial services	12,664	0.8	74,660	1

No. refers to number; % percentage; Nat. national; Source: Censos Económicos 2014, Resultados Definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

1.3 LA PAZ MUNICIPALITY

The municipality of La Paz hosts the Capital City of Baja California Sur. It is comprised of seven boroughs (and their corresponding sub-boroughs) as shown in Table 8. The main localities within La Paz municipality are La Paz (Municipal seat), **Todos Santos**, El Centenario, Chamelta and **El Pescadero**¹. Todos Santos and El Pescadero are the focus regions of the present report.

Table 8. Sub-boroughs, Boroughs, and Municipality Heads within La Paz Municipality

Borough	Sub-boroughs	Population size	
		2005	2010
Todos Santos	El Pescadero, El Veladero, Texcalama, Ejido Plutarco Elías Calles, Saltito de los García, El Aguaje, San Andrés, El Refugio, Los Horconcitos, Santa Gertrudis, Las Playitas, Matancitas, San Venancio	4,078	5,148
San Antonio	El Triunfo, El Rosario, Palo de Arco, San Antonio de la Sierra, El Valle Perdido, Palos Verdes	468	463
Los Dolores (Las Pocitas)	San Hilario, Santa María de Toris, La Soledad, San Pedro de la Presa, El Caporal, Santa Rita, San Fermín, Santa Fe, El Paso de Iritú, Puerto Chale	293	345
San Juan de Los Planes	El Ancón, Agua Amarga, El Sargento	819	902
Los Barriles	El Coro, El Cardonal, San Bartolo	1,056	1,174
El Valle del Carrizal	San Blas, Col. Álvaro Obregón, La Matanza, Ejido Melitón Albañez, La Trinidad	433	618
La Paz (Head municipality and Capital city)	El Centenario, Chametla, San Juan de la Costa, Alfredo V. Bonfil, El Progreso, Conquista Agraria, San Pedro, La Fortuna, San Evaristo	189,176	215,178

Source: Censo de Población y Vivienda 2005; XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

More detailed information on socio-demographic indicators in La Paz municipality can be found in Annex II.

2. TODOS SANTOS AND EL PESCADERO

2.1 LOCATION

Todos Santos (founded in 1723 by Jesuit missionaries) is a traditional colonial town located in a plateau at the foothills of the Sierra de La Laguna Mountains. It is located 73 km north of Cabo San Lucas and 80 km south of the city of La Paz (geographic reference coordinates: 23°26'57.8" N, 110°13'22.9" W, figure 3). Todos Santos has become a home for many local and international artists. The Secretary of Tourism of Baja California Sur named Todos Santos a federally designated, "Pueblo Mágico" in 2006. Todos Santos borough, within its urban and rural surrounding areas, is known for its agricultural areas. Coastal plains characterize the local landscape with rolling hills creating the foothills between the coast and the Sierra de La Laguna mountain range. These plains have been shaped by surface water runoff and wind erosion and are comprised by alluvial deposits and a long stretch of coastal dunes on the Pacific coast².

El Pescadero is a small rural town about 8 km south to Todos Santos, located at Km 64 of the Transpeninsular highway. It is 64 km north of Cabo San Lucas and 94 km south of La Paz City (geographic reference coordinates: 23°20'44" N, 110°9'22" W, figure 3). El Pescadero is bordered by Todos Santos borough to the north, Los Cabos municipality to the south, Santiago borough to the East and the Pacific Ocean to the West.

The topographic map of Todos Santos and El Pescadero (scale 1:50,000)¹ is shown in Annex III.



Fig. 3. Original map derived from Google maps <https://mail.google.com>

2.2 SOCIO-DEMOGRAPHIC INDICATORS

Demography

Todos Santos has a total population size of 5,148 inhabitants representing the second largest locality within the municipality of La Paz. Todos Santos borough is comprised of fourteen sub-boroughs including Todos Santos town and thirteen additional sub-boroughs, as shown in Table 9. The population distribution per sub-boroughs is shown in Table 9. El Pescadero shows a total population of 2,338 inhabitants (including 1191 males and 1147 females), representing the second largest locality within the Todos Santos borough. The age structure for the total population of Todos Santos and El Pescadero is shown in Figure 4. The annual population growth rate for Todos Santos and El Pescadero corresponds to 0.69% and 2.57%, respectively². The main population variables for Todos Santos and El Pescadero are summarized in Table 10.

Table 9. Population distribution of Todos Santos borough and surrounding localities (sub-boroughs) in 2005 and 2010.

Name	Seat	2005	2010
Todos Santos	Borough	4,078	5,148
El Pescadero	Subborough	1,634	2,338
El Veladero	Subborough	2	4
Texcalama	Subborough	31	20
Ejido Plutarco Elías Calles	Subborough	50	102
Saltito de los García	Subborough	31	26
El Aguaje	Subborough	15	10
San Andrés	Subborough	16	16
El Refugio	Subborough	16	8
Los Horconcitos	Subborough	14	6
Santa Gertrudis	Subborough	13	41
Las Playitas (El Batequito)	Subborough	2	23
Matancitas	Subborough	11	10
San Venancio	Subborough	n.d.	1

Fuente: Censo de Población y Vivienda, 2005, Resultados Definitivos; XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

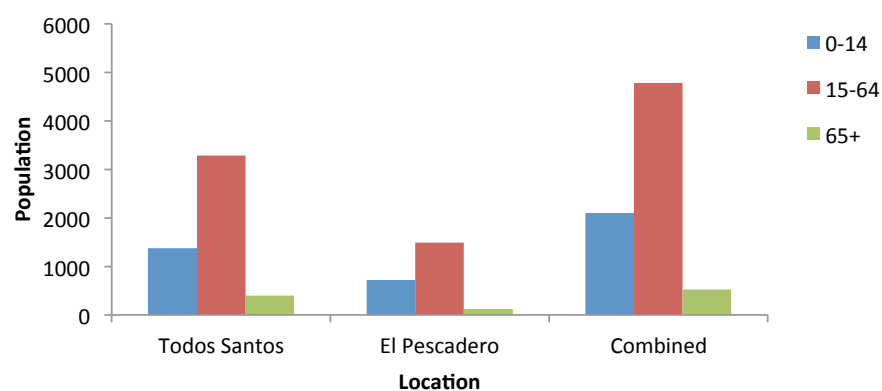


Fig. 4. Age structure of total population in Todos Santos, El Pescadero and combined populations. Source: XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Table 10: Main population variables for Todos Santos and El Pescadero

Variable	Description	Todos Santos	El Pescadero	Both
Total Population	Total number of residents	5148	2338	7486
Male population		2631	1191	3822
Female population		2517	1147	3664
Average live births	Average live births per woman	2.32	2.4	
Native population	People born in the location	4148	1736	5884
Non-native pop	People born in other states	751	565	1316
Economically Active Population	12+ yr olds who had a job or were looking for a job during the survey week	2088	943	2203
Economically Active males		1479	724	2203
Economically Active females		609	219	828
Non-Economically Active Population	12+ yr olds who are retired, students, staying at home, or with a disability that impedes to work.	1843	783	2626
Non-Economically Active males		548	167	715
Non-Economically Active females		1295	616	1911
Affiliated to at least one health service	Affiliated with the health services from IMSS, ISSSTE, PEMEX, SEDENA, SEMAR or SSA	3484	1290	4774
Not affiliated to any health service		1566	1041	2607
Number of homes	Homes are inhabited private units (houses, apartments, mobile units, etc.)	1328	527	1855
Homes with male head of household		1075	420	1495
Homes with female head of household		253	107	360
Population in homes	Homes are inhabited private units (houses, apartments, mobile units, etc.)	5079	2169	7248
Population in homes (male head of household)		4224	1738	5962
Population in homes (female head of household)		855	431	1286
Total houses	Houses = inhabited and not inhabited houses, temporary and collective	2013	727	2740

yr refers to years; IMSS Instituto Mexicano del Seguro Social; ISSSTE Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado; PEMEX Petróleos Mexicanos; SEDENA Secretaría de la Defensa Nacional; SEMAR

Economy

The economic activities in Todos Santos and El Pescadero follow different patterns. While Todos Santos economic activities are based in the tertiary sector, mainly trade and services, El Pescadero economic activities rely on the primary sector, primarily agriculture. The economic structure of different sectors in the focus regions is shown in table 11.

Table 11. The economic structure at the different sector activities in Todos Santos and El Pescadero

Entity	Employees	Economic structure		
		Primary	Secondary	Tertiary
BCS	138,565	11.90%	20.30%	64.80%
La Paz	56,051	2.20%	19.70%	74.90%
Todos Santos	1,376	22.20%	18.50%	55.70%
El Pescadero	533	50.80%	15.00%	25.70%

Source: Centro de Estudios de Urbanismo y Arquitectura SA de CV (CEURA) based on data from XII Censo de Población y Vivienda 2000, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

The main economic activities in Todos Santos correspond to tertiary sector including tourism (37% national and 63% international), trade and services, followed by the primary sector such as agriculture and fishing. Harvest products for exportation include fresh herbs, strawberries and bell pepper¹⁰. The number of economic units registered in Todos Santos are shown in table 12.

The main economic activities in El Pescadero correspond to the primary sector including agriculture and fishing, followed by the tertiary sector including handcraft production, alternative tourism, regional sweet production and food-derived products².

Table 12. Economic Units in Todos Santos, Baja California Sur

NE	Economic activity
2	Agriculture, animal breeding, forestry, fishing and hunting
0	Mining
1	Generation, transmission and distribution of electricity, water and gas by pipeline to the final consumer
2	Construction
34	Manufacturing industries
9	Wholesale trade
202	Retail trade
6	Transport, postal services and warehousing
7	Mass media information
6	Financial services and insurance
18	Rental real state and personal property and intangible services

10	Professional, scientific and technical services
0	Corporate
2	Support services to businesses and waste management and remediation services
11	Educational services
16	Health and welfare services
11	Recreational, cultural and sporting services
96	Providers of temporary accommodation and preparation of food and drink
61	Other services excluding government activities
15	Legislative and government activities, administration of justice and international and extraterritorial organizations

NE refers to number of Economic Units; Source: Directorio Estadístico Nacional de Unidades Económicas (DENUE); Detailed information per economic activity is shown in Annex IV. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Infrastructure of basic public services

According to the Sub-regional Program for Urban Development in Todos Santos – El Pescadero – Las Playitas, Todos Santos and El Pescadero show a high coverage (>90%) in basic services including water supply, electricity, and telephone, except for the sewage system. Approximately, 74% and 51% of the housings in Todos Santos and El Pescadero, respectively, has access to municipal sewer systems in these localities. The deficit in connections is mitigated by the use of septic tanks².

The water supply, sewage and sanitation in the municipality of La Paz are attended by OOMSAPA (Organismo Operador Municipal del Sistema de Agua Potable y Alcantarillado de La Paz (SAPA)). SAPA has water supply networks in Todos Santos borough and El Pescadero subborough. Some other localities without a water supply network have support from the “Ejido” agricultural water using tanker trucks.

The main source of water supply in Todos Santos and El Pescadero comes from groundwater extracted directly from deep wells. Todos Santos water is supplied by two wells (San Ignacio and El Manguito) while El Pescadero water is supplied by one well (Pescadero)¹². The groundwater extraction volumes for each of the wells are shown in Table 13. The wells in Todos Santos are located within the agricultural area, and the water is used mainly for agriculture irrigation and domestic use².

Table 13. Groundwater extraction volumes from wells (2014)

Locality	Wells name	Extraction volume (l/s)
Todos Santos	San Ignacio	16
	El Manguito	35
El Pescadero	Pescadero	7

Source: H. XIV Ayuntamiento de La Paz 2011-2015. Organismo Operador Municipal del Sistema de Agua Potable y Alcantarillado de La Paz (SAPA), see Annex V.

Mean water consumption per day per person is estimated 712 liters in Todos Santos and 441 liters in El Pescadero².

The sanitary sewer network in Todos Santos and El Pescadero has an approximate coverage of 74% and 51% of households, respectively. In El Pescadero, this network consists of a gravity-fed system of pipes and collectors that conduct the wastewater directly to the treatment plant. In Todos Santos the wastewater is routed to a water collecting sump basin and pumped to the treatment plant². There is a local private sewage service “Septicktruck” employed by the current borough-administration that participates in the pumping process of septic tanks. Specific information on the available wastewater treatment plants is shown in Table 14. According to OOMSAPA, there are a total of 829 households units connected to the water supply/sewage system, in addition to 174 units connected in Todos Santos that are not specified¹².

Table 14. Sewage treatment plants in Todos Santos and Pescadero

Locality	Name	Process	Capacity (l/s)	Treated flow (l/s)	Receptor	Observations
Todos Santos	Cala de Ulloa	activated sludge	15	12	wash (no name)	Private initiative, started in 2009
Todos Santos	Todos los Santos	waste stabilization pond	20	5	Subsoil infiltration (by the sea)	Poor operation condition
El Pescadero	El Pescadero	activated sludge	3.5	1.5	green areas (palm trees)	

Source: Inventario nacional de plantas municipales de potabilización y de tratamiento de aguas residuales en operación, Diciembre 2012. Comisión Nacional del Agua, CONAGUA.

According to the State Program for Prevention and Solid Waste Management in Baja California Sur, the infrastructure to accommodate adequate solid waste management in Baja California Sur is insufficient¹³. The sub-regional Program for Urban Development in Todos Santos – El Pescadero – Las Playitas, recognized that the main environmental challenges faced by the five municipalities of Baja California Sur are related to the lack of an adequate solid waste management. Those challenges include poor management and solid waste disposal, agrochemical pollution, solid waste pollution, contamination from tire rubber, construction and demolition waste, contamination from open garbage dumps (tiraderos de cielo abierto), and waste from fisheries².

The solid waste production per municipality in Baja California Sur is shown in Figure 15. Todos Santos and El Pescadero combine to be the second largest urban solid waste producers (12,272 ton/yr) within the La Paz municipality¹³. The waste collection system and infrastructure in Todos Santos is shown in Table 16. Todos Santos has one recycling collection center, “Punto Verde”. Todos Santos and El Pescadero share the same waste disposal site - an open garbage dump, which is periodically burned. Some characteristics of the final disposal are shown in Table 17. At the open garbage dump, there is no management for the different types of waste, which includes construction residues, sewage treatment sludge, hazardous residues from hospitals, or agricultural and fishing waste) at the open garbage dump. There is a proposed landfill construction in Todos Santos that will be regulated according to the Mexican Official Law NOM-083-SEMARNAT-2003 (i.e.

controlled site that follows landfill specifications in terms of infrastructure and operation system but does not follow waterproofing specifications¹³).

Table 15. Solid waste production per municipality

Municipality	Ton/yr	Proportion (%)
La Paz	179,381	38.6
Los Cabos	204,286	43.9
Loreto	8,950	1.9
Comondú	47,333	10.1
Mulegé	24,536	5.2
Total	464,479	100

Yr refers to years; Source: Programa Estatal para la Prevención y Gestión Integral de Residuos para el Estado de Baja California Sur. Dirección de Planeación Urbana y Ecología. 2011. Centro de Estudio de Urbanismo y Arquitectura SA de CV (CEURA).

According to the State Program for Prevention and Solid Waste Management in Baja California Sur, there is no integrated solid waste management (i.e. strategies to reduce, reuse and recycle the solid waste and to address storage, collection, treatment and final disposal of solid waste) in Todos Santos or any other town in Baja California Sur¹³. The primary potential environmental issues related to the current state of solid waste in Todos Santos include: air pollution derived from the open burning of unwanted materials such as plastics and tires particularly in rural areas; and water and soils pollution derived from open garbage dumps (without any environmental regulation) as well as agriculture and ranching (by agrochemicals)¹³.

Table 16. Waste collection system and infrastructure in La Paz (city) and Todos Santos

	La Paz (City)	Todos Santos
Number of trucks	32	3
Weekly frequency	2	2
Coverage (%)	100	90
Garbage trucks	1	0
Collection employees	154	9
Street sweepers employees	145	18
Mechanic sweeper	1	0

Source: Programa Estatal para la Prevención y Gestión Integral de Residuos para el Estado de Baja California Sur. Dirección de Planeación Urbana y Ecología. 2011. Centro de Estudio de Urbanismo y Arquitectura SA de CV (CEURA).

Table 17. Solid waste disposal in La Paz (city) and Todos Santos

	La Paz (City)	Todos Santos
Final disposal	Controlled garbage dump	Open garbage dump
Volume per day (ton)	433	22
Surface (hectares)	50	6
Lifespan (years)	12	0

Source: Programa Estatal para la Prevención y Gestión Integral de Residuos para el Estado de Baja California Sur. Dirección de Planeación Urbana y Ecología. 2011. Centro de Estudio de Urbanismo y Arquitectura SA de CV (CEURA). Enero 2011.

Education

In Todos Santos, there are 13 educational establishments, including public and private schools from pre-school to high-school¹, the number of establishments per type of school is shown in Table 18. The name and location of the corresponding schools are shown in Annex IV. In 2007 a total of four educational establishments were registered in El Pescadero. According to the Secretary of Social Development, the number of registered educational establishments does not entirely cover the educational needs in Todos Santos and El Pescadero².

Table 18. Education Infrastructure in Todos Santos

Type of School	Number of schools
Public Pre-school	3
Private Pre-school	2
Public Primary	3
Public Secondary	3
Public High School	1
Special Needs School	1
Libraries	2

Source: XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

A great proportion of the population between 6-11 years (primary students) attend school, however, school attendance tapers off with age, as shown in Figure 5.

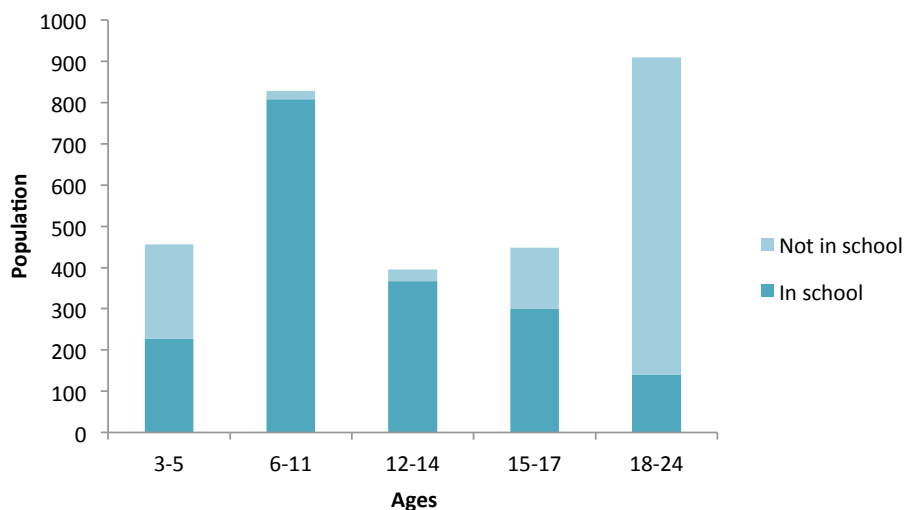


Fig. 5. Population distribution by age attending and not attending school in Todos Santos and El Pescadero. (Source: XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía INEGI <http://www.inegi.org.mx>).

Some other education indicators in the study area are shown in Tables 19 and 20.

Table 19. Educational condition of the population from Todos Santos and El Pescadero

Educational condition	Description	Todos Santos	El Pescadero	Both
Illiterate 8-14 yr olds		10	7	17
Illiterate 15+ yr olds		60	50	118
15+ yr olds without school degrees or just pre-school		71	61	132
15+ yr olds without primary school		394	253	647
15+ yr olds with primary school only		657	403	1060
15+ yr olds with secondary school only		884	339	1283
18+ yr olds with post-basic school	High school, technical or commercial studies, university, masters or doctorate degree	1355	336	1691

XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Illiteracy in Mexico is defined as the population over 15 who does not read or write¹. Todos Santos and El Pescadero, and Baja California Sur state fare well below the national average of 8%, see table 20. Still, the micro-region surrounding these 2 localities have 6+ % of illiteracy.

Table 20. Comparative illiteracy with state and national average

Location	Percentage of Illiteracy
Todos Santos & El Pescadero	2.2 %
Baja California Sur	3.6 %
México (national)	8 %

XIII Censo de Población y Vivienda 2010, Resultados definitivos. Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Health

In this section, information is provided regarding the health services infrastructure in Todos Santos and El Pescadero, the primary diseases in Todos Santos and El Pescadero and the main causes of adult and infant mortality in La Paz and Baja California Sur.

Health services infrastructure. The main health centers for Baja California Sur are located in the capital city, La Paz. In addition to a few private hospitals and clinics, the publicly-affiliated hospitals Instituto Mexicano del Seguro Social (IMMS), Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE), and Secretaría de Salubridad (SSA), are based in La Paz. There are no-fully equipped hospitals available in Todos Santos and El Pescadero, but there are health care clinics, see Table 21.

Table 21. Hospitals and Clinics in Todos Santos and El Pescadero

Unit	No. of doctors	No. of nurses
Todos Santos		
ISSSTE Clinic	3	2
SSA Health Center	2	4
Saint Luke's Private Clinic	(not known)	(not known)
El Pescadero		
SSA Rural Health Center	1	1

No. refers to number; ISSTE "Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado"; SSA "Secretaría de Salud". Source: Programa Subregional de Desarrollo Urbano de Todos Santos – El Pescadero – Las Playitas, La Paz B.C.S. 2012. Centro de Estudio de Urbanismo y Arquitectura SA de CV (CEURA).

Health Factors. The primary reported diseases in Todos Santos and El Pescadero between 2010 and 2015 are shown in Table 22. The data was derived directly from health institutions in Todos Santos and Pescadero, and collected by the National Health System.

Table 22. Reported Diseases/Illnesses in Todos Santos and El Pescadero (2010-2015)

Condition	Todos Santos		El Pescadero	
	Cases	Rank	Cases	Rank
Acute Respiratory Infections	11290	1	2776	1
Intestinal infections	1759	2	453	2
Urinary infections	1714	3	352	3
Ulcers, gastritis and duodenitis	604	4	78	5
Acute otitis media	366	6	176	4
Gingivitis and periodontal diseases	490	5	11	13
Asthma	201	7	44	6
Chickenpox	194	8	44	6
Other	149	9	27	9
Pneumonia and bronchopneumonia	136	10	30	8
Urogenital candidiasis	108	11	8	14
Helmintiasis	87	12	12	12
High BP	63	14	35	7
Diabetes mellitus*	64	13	24	10
Dog bites	38	15	18	11
Burns	31	17	12	12
Mild malnutrition	35	16	1	19
Intestinal amoeba	26	19	7	16
Scabies	28	18	3	18
Conjunctivitis	18	20	8	15
Dengue fever	18	20	1	20
Giardiasis	16	21	0	-

Infectious parotitis	10	22	2	19
Intoxication/animal poison	2	26	9	14
Moderate malnutrition	8	23	0	-
Non-dog mammal bites	7	24	1	20
Enterobiasis	7	24	0	-
Cervical dysplasia	0	-	4	17
Ischemic heart disease	0	-	4	17
Tuberculosis	3	25	0	-
Severe malnutrition	0	-	2	19
Alcoholic liver disease	0	-	2	19
Sequels from other effects	0	-	2	19
Cerebrovascular diseases	0	-	2	19
Urogenital trichomoniasis	2	26	0	-
Scorpion stings	0	-	1	20
Acute hepatitis A	0	-	1	20
Syphilis	0	-	1	20
Veneral lymphogranuloma chlamydia	0	-	1	20
Accidents in transport	0	-	0	-

* non-insuline dependant; Source: Dirección General de Epidemiología, Secretaría de Salud. Sistema Nacional de Salud.

According to the National Public Health Institute, acute intestinal diseases (in children under five) and acute respiratory diseases (in children under 10) were also reported as relevant health issues in children from Baja California Sur. State prevalence rates are 15.4% and 44.3% respectively, which is higher than the national mean¹⁵. In relation to degenerative chronic diseases, it is important to mention that the prevalence value for hypertension in BCS (16%) is slightly higher than the mean national (15.9%) whereas the prevalence value for diabetes in BCS (8.5%) is slightly lower than the mean national (9.2%). Finally, the prevalence values for overweight (26.2%) and obesity (23.0%) in children (5-11 years) were considerably higher compared to the national mean (19.8% and 14.6%, respectively). In general, 49% of children in primary school are considered to be overweight at some level. In BCS, overweight and obesity are considered serious public health problems affecting 8 out of 10 men and women above the age of 20. Anemia, also represents a serious problem in BCS in children under 5, and if even more prevalent within 12 and 24 months olds¹⁵.

Mortality. Information on the main causes of mortality for Todos Santos and El Pescadero area was not available. Information on adult mortality in Baja California Sur and in La Paz municipality is shown in Figure 6 and the state infant mortality information is shown in Figure 7.

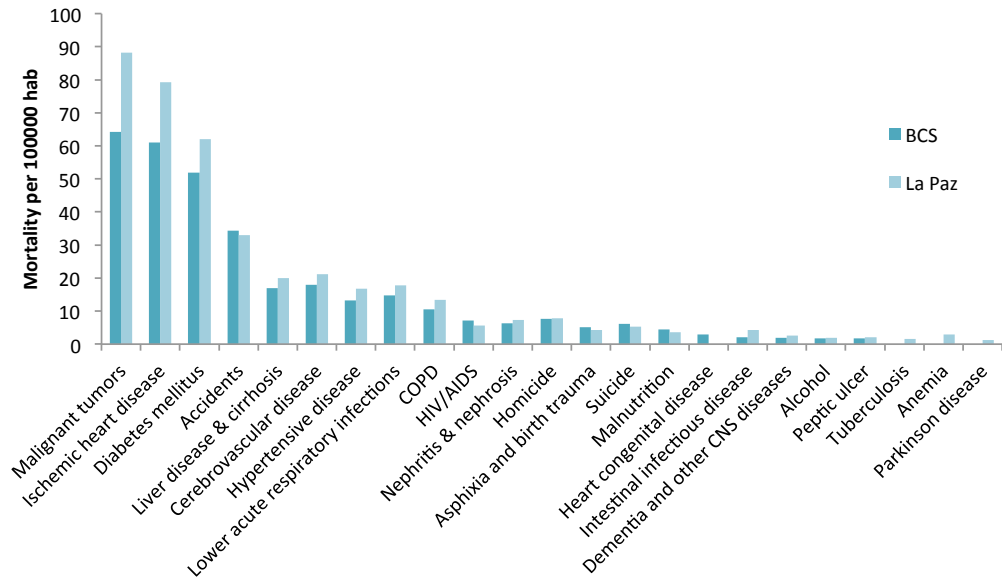


Fig. 6. Mortality rate by cause in Baja California Sur and La Paz municipality 2010-2011. (Source: Subdirección de Estadística. Secretaría de Salud en el Estado de Baja California Sur. *in*: Datos básicos de Baja California Sur 2012. Gobierno del Estado de Baja California Sur, Secretaría de Promoción y Desarrollo Económico, y Dirección de Informática y Estadística.

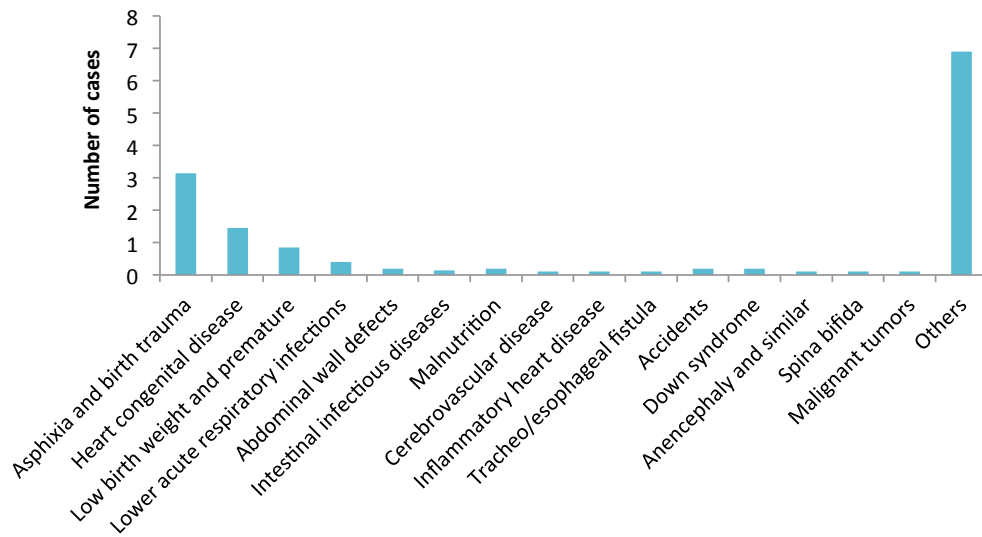


Fig. 7. Infant mortality causes per 1000 live-registered-births in BCS 2010-2011. (Source: Subdirección de Estadística. Secretaría de Salud en el Estado de Baja California Sur. *in*: Datos básicos de Baja California Sur 2012. Gobierno del Estado de Baja California Sur, Secretaría de Promoción y Desarrollo Económico, y Dirección de Informática y Estadística.

2.3 ENVIRONMENTAL INDICATORS

Abiotic characteristics

Todos Santos and El Pescadero belong to the Baja California peninsula province and the Cape Region sub-province. The Cape Region occupies the southern tip of Baja California peninsula. It is crossed by the Tropic of Cancer (23°27' N), and, like the Mediterranean ecosystems of the north, it receives more precipitation than the mid-peninsular deserts. Rainfall in the Cape region, however, is mostly derived from tropical cyclonic storms that reach the peninsula in late summer and fall. The Sierra de La Laguna, a granite mountain range reaching 2200 m in its highest peak, transverses the Cape Region from north to south; sediments derived from its granitic rocks have formed most of the soils of the peninsular Cape²³. A summary of geographic characteristics of the study area are shown in Table 23.

Climate

The climate in Todos Santos and El Pescadero is considered a desert climate. The climate is heavily influenced by the Pacific Ocean which moderates the temperatures year round. According to the Köppen-Geiger climate classification, the climate is classified mostly as very dry and semiarid in the wettest regions of the Cape Mountains with summer and winter seasons of precipitation. The mean annual temperature range is 22°C (71.6°F) – 24°C (75.2°F). A desert is considered by definition an area where precipitation is less than 250 mm per year. The mean annual precipitation in Todos Santos and El Pescadero is 161mm².

Table 23. General geographic characteristics of Todos Santos and El Pescadero

Todos Santos and El Pescadero			
Physiography			
Province	Baja California Peninsula		
Sub-province	Batolito de Los Cabos Subprovince (Cape Region)		
Climate	Coast line	Mountainous region ("Sierra")	
	BW (h') hw (x')	C (Wo)	
	Dry, semiarid	Temperate, sub-humid	
Temperature	Coast line	Mountainous region ("Sierra")	
	Mean annual	22°C (71.6°F)	18°C (64.4°F)
	Nov-Apr (mean range)	12°C (53.6°F) min. 27°C (80.6°F) max.	6°C (42.8°F) min. 75.2°C (162.5°F) max.
	May-Oct (mean)	33°C (91.4°F)	
Precipitation			
Mean annual	161 mm		
Soils	Regosols (mostly) and Fluvisol (to a lesser extent)		
Hydrography			
Hydrologic region	RH3 " Baja California Suroeste (Magdalena plains)		
Watersheds	Caracol wash – Candelaria wash; Venancio wash – Salado wash, Mezquital wash - Comondú wash		
Geomorphology			
	Coastal plains and valleys Mountainous range		
Elevation	0 – 400 m above sea level		
Geology	igneous rocks, metamorphic rocks, arsenic rocks, Mesozoic and Cenozoic conglomerates.		

Source: Programa Subregional de Desarrollo Urbano de Todos Santos – El Pescadero – Las Playitas, La Paz B.C.S. 2012. Centro de Estudio de Urbanismo y Arquitectura SA de CV (CEURA).

Water

There is naturally-occurring water scarcity in Todos Santos and El Pescadero, characterized by low levels of precipitation in summer season occasionally supplemented by hurricanes. Surface runoff is intermittent and disappears through soils infiltration or towards the coastal plains. According to a published study on groundwater availability in Todos Santos conducted by the National Water Council (CONAGUA)¹⁶, the presence of hurricanes has an important effect on the aquifers recharges, leading in many cases, to a fast recovery of the groundwater levels.

Todos Santos aquifer is located in the Southeast of Baja California Sur, covering an area extension of 151 km². Mean elevation of the aquifer is 300 m above sea level and 100 m above sea level in the valley. It borders with the Cañada Honda aquifer in the north, El Pescadero aquifer in the southeast, and the Pacific Ocean in the west (figure 8). The aquifer falls within the municipality of La Paz¹⁶.



Fig. 8. Location of Todos Santos aquifer (Source: Determinación de la disponibilidad de agua en el acuífero 0313 Todos Santo, Estado de Baja California Sur. 2009. Comisión Nacional del Agua (CONAGUA). Subdirección General Técnica. Gerencia de Aguas Subterráneas. Subgerencia de Evaluación y Ordenamiento de Acuíferos).

El Pescadero aquifer spans an area of 439 km². Mean elevation of the aquifer is 500 m above sea level and 100 m above sea level in the valley. It borders with Todos Santos aquifer in the north, Plutarco Elías Calles aquifer in the south, San José del Cabo and Santiago to the east, and the Pacific Ocean to the west (figure 9). The aquifer is located mostly within La Paz municipality and a small portion of the mountainous region (East) belongs to Los Cabos municipality¹⁷.



Fig. 9. Location of El Pescadero aquifer (Source: Determinación de la disponibilidad de agua en el acuífero 0314 El Pescadero, Estado de Baja California Sur. 2009. Comisión Nacional del Agua (CONAGUA). Subdirección General Técnica. Gerencia de Aguas Subterráneas. Subgerencia de Evaluación y Ordenamiento de Acuíferos).

The main water use in Todos Santos is domestic and for livestock El Pescadero utilizes its water primarily for agriculture and domestic use. There is no Irrigation district or unit but a Technical Committee of Underground Waters (COTAS), “Valle de Todos Santos-El Pescadero”, since 2000. Both aquifers belong to the Council of the Baja California Sur Basin².

Hydrology. The hydrology of the watershed is comprised by intermittent rivers and washes (surface runoff is present less than 50% of the time during rainy seasons). All rivers in the watershed originate at the highest elevations of the watershed mostly in the Sierra de La Laguna Mountains, where most of the fresh water is captured. The mean annual surface runoff derived from the mountains varies from 20-30 mm at elevations above 1000 m, 10 mm at elevations between 400-1000 m, to less than 10 mm at elevations under 400 m. The most relevant washes comprising the fluvial network in the watershed are “El Salado,” “Las Piedritas” (which flows into the sea) and “Grande” (which flows into the “Santa Inés” dam)². The structure and hydraulic behavior classifies the Todos Santos and El Pescadero aquifers as “free” type, constituted by alluvial sediments deposited in the washes and the coastal plain. In both aquifers permeability is medium-low based on clay soils. Groundwater recharge comes directly from the rain and surface runoff filtration along the valley. Natural discharge occurs through groundwater drainage to the ocean and evapotranspiration. Artificial discharge occurs through capture extraction^{16,17}.

The main surface runoff in the Todos Santos watershed is La Reforma coming from the “Santa Inés” dam, which runs along the Todos Santos valley to ultimately reach the Pacific Ocean. There are several runoffs that originate in the mountains and separate the El

Pescadero aquifer from San José del Cabo and Santiago. The most important washes for this aquifer are Arroyo Grande, Santa Rosa, El Palmar de En Medio and El Refugio, which all run towards in the Pacific Ocean¹⁶.

There is no hydraulic infrastructure for capturing and storing water surface runoff in the region. Transmissivity values for the aquifers from southwest region of Baja California Sur vary from 2.6 to $84 \times 10^{-3} \text{ m}^2/\text{s}$ (estimated values in 2007)². The static water depth level has been relatively constant during the last three decades for Todos Santos and El Pescadero aquifers².

Water quality tests. The value for total dissolved solids is 1000mg/l. This value is above the maximum allowable concentrations (according to the Mexican laws) for drinking water due to its high content of sodium, calcium and chloride. The values estimated for metals concentration (i.e. bromide, iodine, strontium, boron, lithium, and arsenic) and silica are below the maximum allowable concentrations according to Mexican and international laws^{16,17}.

The Todos Santos aquifer is the smallest of those located in the southeast region of Baja California Sur, however it gets a considerable recharge during spring discharge. Considering the small water catchment area of the basin and the precipitation scarcity, it is assumed that the aquifer feeds additionally from the recharge areas located in vicinity basins¹⁶.

Groundwater availability. According to CONAGUA, the groundwater availability was estimated at 725,371 m³ annually in El Pescadero aquifer, and 151,039 m³ annually in Todos Santos aquifer during 2009.^{16,17} Recently, the groundwater availability was estimated at 581,960 m³ annually in Todos Santos aquifer during 2014¹⁸. (see Table 24 and Annex VI).

Table 24. Groundwater availability in the Todos Santos and El Pescadero aquifers

Groundwater (annual millions of cubic meters)			
Aquifer	Todos Santos		El Pescadero
	2009*	2014	2009*
Mean annual natural ground-water recharge	18.4	18.4	8.2
Natural discharge comprometida	14.7	14.7	5.1
Concessioned groundwater volume	3.851039	3.118040	2.374629
Extraction volume for technical studies	3.7	3.7	
Groundwater availability	0.151039	0.581960	0.725371
Deficit	0.151039	0.000000	

Source: * Determinación de la disponibilidad de agua en el acuífero 0313 Todos Santo, Estado de Baja California Sur; Determinación de la disponibilidad de agua en el acuífero 0314 El Pescadero, Estado de Baja California Sur 2009. Comisión Nacional del Agua (CONAGUA). Subdirección General Técnica. Gerencia de Aguas Subterráneas. Subgerencia de Evaluación y Ordenamiento de Acuíferos; Disponibilidad media anual de agua subterránea. Diario Oficial de la Federación. 2015. Segunda Sección. Poder Ejecutivo. Secretaría de Medio Ambiente y Recursos Naturales.

Land

According to the Sub-regional Program for Urban Development in Todos Santos – El Pescadero – Las Playitas, the rapid increase in tourism and the ensuing demand for urban real estate in recent years have been intense drivers of land-use change in Todos Santos, coupled with the historic activities of agriculture and cattle ranching that have continued through the generations in this region². The distribution of the land use in Todos Santos and El Pescadero (combined) are shown in Table 25.

Table 25. Structure of land use in Todos Santos and El Pescadero

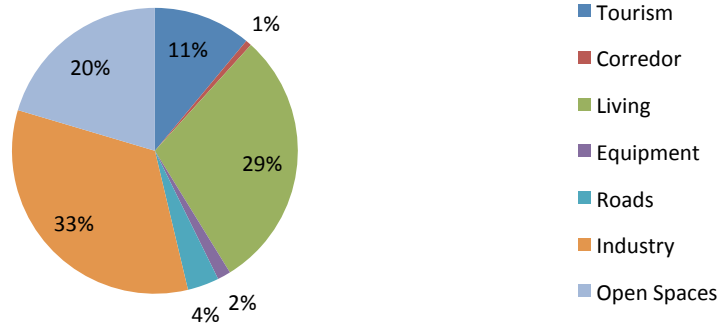
Land use	Proportion (%)
Sarcocaulle scrub	3.59
Sarcocaullescent scrub	65.38
Mezquital	0.15
Harvested grassland	4.69
Water bodies	2.48
Washes	9.41
Gallery vegetation	0.14
Irrigation zone	3.48
Federal zone	0.25
Urban area	9.69
Roadways	0.74
Total	100

Source: Programa Subregional de Desarrollo Urbano de Todos Santos – El Pescadero – Las Playitas, La Paz B.C.S. 2012. Centro de Estudio de Urbanismo y Arquitectura SA de CV (CEURA).

Land Tenure. The region falls generally under three types of land ownership: Ejidos, private property and “conduerazgo”. An ejido is an area of communal land used for agriculture on which community members individually possess and farm a specific parcel. The ejido land corresponds to three main area extensions including Ejido Frac. 2 La Matanza (north), Ejido Frac. Todos Santos (center), and Ejido Frac. Pescadero (south). Private property is comprised of three main properties including El Cardon, Agua Blanca Secc. 1 and Las Playitas (north), La Bandera y La Tinaja (center), as well as four properties divided into three areas in the south. The Todos Santos borough owns 18 land areas corresponding to 67.8 hectares donated by the Todos Santos Ejido².

Land use in urban areas. According to the Sub-regional Program for Urban Development in Todos Santos – El Pescadero – Las Playitas, Todos Santos primary land-use activities include industry and living. The proportion of urban land use activities in Todos Santos and El Pescadero are shown in Figure 10. The affected native vegetation related to land use in urban areas of the focus regions corresponds to Sarcocaullescent shrubland and Crassicaulescent shrubland (Santiago-Leon *et al.* 2014).

A. Urban land use in Todos Santos



B. Urban land use in El Pescadero

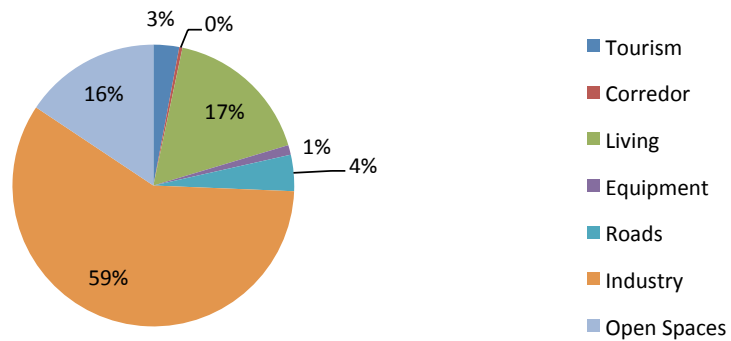


Fig. 10. Urban land use in A. Todos Santos and B. El Pescadero (Source: Programa Subregional de Desarrollo Urbano de Todos Santos – El Pescadero – Las Playitas, La Paz B.C.S. 2012. Centro de Estudio de Urbanismo y Arquitectura SA de CV (CEURA).

Biotic characteristics

Vegetation

The forest resources in Todos Santos are mainly biotic communities in the arid and semi-arid zone including approximately 2,000 species of trees, shrubbery, and herbs (Fraga, 1986)². The predominant vegetation is Foggy Sarcocaulous Scrubland, also known as coastal desert vegetation (i.e. Agave, Opuntia, Stenocereus, Pachycereus and Cephalocereus)².

Fauna

According to Nelson (1921) and Wiggins (1980), the localities lie within the faunistic zone of the Cabo District, in the Arid Tropical Region (E4). This is a large region, which extends from north of the city of La Paz to the southern tip of the peninsula. The Cabo District fauna has a biogeographical affinity with the Sonoran Desert (Nearctic Ecozone), although it presents an important number of species from the Neotropical Ecozone. Due to human development in both localities and the presence of natural areas, it is considered a semi-urbanized location. A detailed list of fauna species present in Todos Santos, El Pescadero and immediate surroundings could not be found, but extensive listings can be found associated with information on the Sierra de La Laguna Natural Protected Area.²⁰ From these listings a remarkable characteristic is the high presence of endemism, given the geological history of the peninsula. In the Sierra de La Laguna and surroundings, a number of species have been threatened due to illegal activities and habitat destruction, including: Cougar (*Puma concolor*), rattlesnakes (*Crotalus spp.*), red tail hawk (*Buteo jamaicensis*) and other prey birds, Coyote (*Canis latrans*), Grey Fox (*Urocyon cinereoargenteus*), Bura deer (*Odocoileus hemionus*) and Lynx (*Lynx rufus*)².

Todos Santos has more than 35 km of beaches where sea turtles nest, particularly the Olive Ridley sea turtle (*Lepidochelys olivacea*), Leatherback sea turtle (*Dermochelys coriacea*), Galápagos green turtle (*Chelonia agassizii*), Loggerhead sea turtle (*Caretta caretta*) and Hawksbill sea turtle (*Eretmochelys imbricata*). The nesting season is from July to November²¹. There is a local organization called Grupo Tortuguero de Todos Santos AC, which promotes sea turtle research and conservation in the area of Punta Lobos to Boca del Carrizal in Todos Santos.

Areas of environmental value

According to the Sub-regional Program for Urban Development in Todos Santos – El Pescadero – Las Playitas, there are four main areas of environmental value within the Todos Santos borough: 1) Todos Santos Oasis (part of the local identity, unique flora and fauna, and clear springs); 2) La Poza (natural symbol of the entity, flora and fauna watching); 3) La Lobera (located at Punta Lobos beach, home to hundreds of sea lions); and 4) Sierra de La Laguna (unique tropical dry forest)².

CONABIO (National Council for Biodiversity) has defined priority regions as aquatic and terrestrial ecosystems where a high biodiversity is concentrated. The Sierra de La Laguna (protected natural area since 1994, CONABIO) is considered a priority region. It is known as a vegetation “island” within the arid surroundings of the Baja California Peninsula which is a result of geological processes. The region shows high endemism and was recently considered an evolution center. It comprises most of the described natural species and the highest biological diversity within Baja California Sur. Detailed information on “Sierra de La Laguna” can be found in the Management Plan of the corresponding natural protected area²⁰.

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ANNEX

Annex I

Socio-demographic overview of Baja California Sur. XIII Censo de Población y Vivienda 2010. Instituto Nacional de Estadística y Geografía (INEGI). Original Document

Annex II

Database on socio-demographic indicators from La Paz municipality. Information retrieved from Directorio Estadístico Nacional de Unidades Económicas (DENUE). Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Annex III

Topographic map of Todos Santos and El Pescadero (scale 1:50,000)

Annex IV

Database on Economic Units in Todos Santos. Information retrieved from Directorio Estadístico Nacional de Unidades Económicas (DENUE). Instituto Nacional de Estadística y Geografía (INEGI) <http://www.inegi.org.mx>

Annex V

H. XIV Ayuntamiento de La Paz 2011-2015. Organismo Operador Municipal del Sistema de Agua Potable y Alcantarillado de La Paz (SAPA). Original Document.

Annex VI

Disponibilidad media anual de agua subterránea. Diario Oficial de la Federación. 2015. Segunda Sección. Poder Ejecutivo. Secretaría de Medio Ambiente y Recursos Naturales. Original Document.