

= Lhasa (prefecture @-@ level city) =

Lhasa City , is a prefecture @-@ level city , formerly a prefecture until 7 January 1960 , one of the main administrative divisions of the Tibet Autonomous Region of China . It covers an area of 29 @, @ 274 square kilometres (11 @, @ 303 sq mi) of rugged and sparsely populated terrain . The prefecture @-@ level city contains two districts Chengguan District and Doilungdêqên District .

The prefecture @-@ level city roughly corresponds to the basin of the Lhasa River , a major tributary of the Yarlung Tsangpo River . It lies on the Lhasa terrane , the last unit of crust to accrete to the Eurasian plate before the continent of India collided with Asia about 50 million years ago and pushed up the Himalayas . The terrane is high , contains a complex pattern of faults and is tectonically active . The temperature is generally warm in summer and rises above freezing on sunny days in winter . Most of the rain falls in summer . The upland areas and northern grasslands are used for grazing yaks , sheep and goats , while the river valleys support agriculture with crops such as barley , wheat and vegetables . Wildlife is not abundant , but includes the rare snow leopard and black @-@ necked crane . Mining has caused some environmental problems .

The former prefecture is divided into seven mostly rural counties and one district , which contains the main urban area of Lhasa . The 2000 census gave a total population of 474 @, @ 490 , of whom 387 @, @ 124 were ethnic Tibetans . The Han Chinese population at the time was mainly concentrated in urban areas . The prefecture @-@ level city is traversed by two major highways and by the Qinghai ? Tibet Railway , which terminates in the city of Lhasa . Two large dams on the Lhasa River deliver hydroelectric power , as do many smaller dams and the Yangbajain Geothermal Station . The population is well @-@ served by primary schools and basic medical facilities , although more advanced facilities are lacking . Tibetan Buddhism and monastic life have been dominant aspects of the local culture since the 7th century . Most of the monasteries were destroyed during the Cultural Revolution , but since then many have been restored and serve as tourist attractions .

= = Geography = =

= = = Location = = =

Lhasa lies in south @-@ central Tibet , to the north of the Himalayas . The prefecture @-@ level city is 277 kilometres (172 mi) from east to west and 202 kilometres (126 mi) from north to south . It covers an area of 29 @, @ 518 square kilometres (11 @, @ 397 sq mi) . It is bordered by Nagqu Prefecture to the north , Nyingchi Prefecture to the east , Lhoka (Shannan) Prefecture to the south and Shigatse prefecture @-@ level city to the west . The prefecture @-@ level city roughly corresponds to the basin of the Lhasa River , which is the center of Tibet politically , economically and culturally . Chengguan District is also the center of Tibet in terms of transport , communications , education and religion , as well as being the most developed part of Tibet and a major tourist destination with sights such as the Potala Palace , Jokhang and Ramoche Temple .

= = = Lhasa River basin = = =

Lhasa prefecture @-@ level city roughly corresponds to the basin of the Lhasa River , a major tributary of the Yarlung Tsangpo River . Exceptions are the north of Damxung County , which crosses the watershed of the Nyenchen Tanglha Mountains and includes part of the Namtso lake , and Nyêmo County , which covers the basin of the Nimu Maqu River , a direct tributary of the Yarlung Tsangpo . The river basin is separated from the Yarlung Tsangpo valley to the south by the Goikarla Rigyu range . The largest tributary of the Lhasa River , the Reting Tsangpo , originates in the Chenthangula Mountains in Nagqu Prefecture at an elevation of about 5 @, @ 500 metres (18 @, @ 000 ft) , and flows southwest into Lhasa past Reting Monastery .

The Lhasa River drains an area of 32 @, @ 471 square kilometres (12 @, @ 537 sq mi) , and is

the largest tributary of the middle section of the Yarlung Tsangpo . The average altitude of the basin is around 4 000 metres (14 000 ft) . The basin has complex geology and is tectonically active . Earthquakes are common . Annual runoff is 10 000 000 000 cubic metres (3 60 × 10¹¹ cu ft) . Water quality is good , with little discharge of sewage and minimal chemical pesticides and fertilizers .

The Lhasa River forms where three smaller rivers converge . These are the Phak Chu , the Phongdolha Chu which flows from Damxung County and the Reting Tsangpo , which rises beyond the Reting Monastery . The highest tributary rises at around 5 290 metres (17 360 ft) on the southern slope of the Nyenchen Tanglha Mountains . In its upper reaches the river flows southeast through a deep valley . Lower down the river valley is flatter and changes its direction to the southwest , The river expands to a width of 150 to 200 metres (490 to 660 ft) . Major tributaries in the lower reaches include the Pengbo River and the Duilong River . At its mouth the Lhasa Valley is about 3 miles (4 8 km) wide .

The bulk of the water is supplied by the summer monsoon rains , which fall from July to September . There are floods in the summer from July to September , with about 17 % of the annual runoff flowing in September . In winter the river has low water , and sometimes freezes . Total flow is about 4 cubic kilometres (0 96 cu mi) , with average flow about 125 cubic metres per second (4 400 cu ft / s) . The total hydropower potential of the river basin is 2 560 000 kW . Zhikong Hydro Power Station in Maizhokunggar County delivers 100 MW . The Pangduo Hydro Power Station in Lhünzhub County has total installed capacity of 160 MW .

= = Geology = =

The former Lhasa prefecture lies in the Lhasa terrane , to which it gives its name . This is thought to be the last crustal block to accrete to the Eurasian plate before the collision with the Indian plate in the Cenozoic . The terrane is separated from the Himalayas to the south by the Yarlung @-@ Tsangpo suture , and from the Qiangtang terrane to the north by the Bangong @-@ Nujiang suture . The Lhasa terrane consisted of two blocks before the Mesozoic , the North Lhasa Block and the South Lhasa Block . These blocks were joined in the Late Paleozoic .

The Lhasa terrane moved northward and collided with the Qiangtang terrane along the Bangong suture . The collision began towards the end of the late Jurassic (c . 163 ? 145 Ma) , and collision activity continued until the early Late Cretaceous (c . 100 ? 66 Ma) . During this period the terrane may have been shortened by at least 180 kilometres (110 mi) . The collision caused a peripheral foreland basin to form in the north part of the Lhasa terrane . In some parts of the foreland basin the north @-@ dipping subduction of the Neotethyan oceanic crust below the Lhasa terrane caused volcanism . The Gangdese batholith was formed as this subduction continued along the southern margin of the Lhasa terrane . The Gangdese intrudes the southern half of the Lhasa terrain .

Contact with India began along the Yarlung @-@ Zangbo suture around 50 Ma during the Eocene , and the two continents continue to converge . Magmatism continued in the Gangdese arc until as late as 40 Ma . There was significant crustal shortening as the collision progressed . The South Lhasa terrane experienced metamorphism and magmatism in the Early Cenozoic (55 ? 45 Ma) and metamorphism in the Late Eocene (40 ? 30 Ma) , presumably due to the collision between the continents of India and Eurasia .

Rocks in this region include sedimentary rocks from the Paleozoic and Mesozoic into which granite has intruded during the Cretaceous . The rocks have metamorphosed and are deeply eroded and faulted . The rocks exposed in the Reting Tsangpo canyon range in age from 400 Ma to 50 Ma . The result of faulting has been to often juxtapose relatively recent rocks with much older rocks . Some parts of the ocean floor were pushed up onto the Tibetan Plateau and formed marble or slate . Sea fossils from 400 Ma are found in the river 's canyons , and houses are roofed with slate .

The Yangbajing Basin lies between the Nyainqentanglha Range to the northwest and the Yarlu @-@ Zangbo suture to the south . The Yangbajain Geothermal Field is in the central part of a half @-@ graben fault @-@ depression basin caused by the foremontane fault zone of the Nyainqentanglha Mountains . The SE @-@ dipping detachment fault began to form about 8 Ma .

The geothermal reservoir is basically a Quaternary basin underlaid by a large granite batholith . The basin has been filled with glacial deposits from the north and alluvial @-@ pluvial sediments from the south . Fluid flows horizontally into the reservoir through the faults around the basin . Chemical analysis of the thermal fluid indicate that there is shallow @-@ seated magmatic activity not far below the geothermal field .

During the ice ages of the last two million years the Tibetan plateau and the Himalayas have been covered by the expanded polar ice cap several times . As the ice moved it eroded the rock , filling the river canyons with gravel . In some sections the rivers have cut through the gravel and flow swiftly over bedrock , and in some areas large boulders have fallen into the rivers and formed rapids .

= = Climate = =

The Lhasa valley is roughly the same latitude as the southern United States , but at an altitude of 3 @, @ 610 metres (11 @, @ 840 ft) or more it is of course cooler . The central river valleys of Tibet are warm in summer , and even in the coldest months of winter the temperature is above freezing on sunny days . The climate is semi @-@ arid monsoon , with a low average temperature of 1 @. @ 2 to 7 @. @ 5 ° C (34 @. @ 2 to 45 @. @ 5 ° F) . Average annual precipitation is 466 @. @ 3 millimetres (18 @. @ 36 in) , with 85 % falling in the June ? September period . Typically there are 3 @, @ 000 hours of sunshine each year . It is cooler in the northern regions , warmer in the south . Annual figures :

Studies of temperature and precipitation data from 1979 to 2005 indicate that higher temperatures are leading to longer snow @-@ free periods at the lower elevations . However , at higher levels the amount of precipitation has increased , so despite warming the snow @-@ free period is shorter .

= = Environment = =

Most of the population of Tibet lives in the southern valleys , including those around Lhasa . The higher regions are used by nomadic drokpa who tend herds of yaks , sheep and goats on the steppe grasslands of the hills and high valleys . In the lower parts it is possible to cultivate products that include barley , wheat , black peas , beans , mustard , hemp , potatoes , cabbage , cauliflower , onions , garlic , celery and tomatoes . The traditional staple food is barley flour called tsampa , often combined with buttered tea and made into a paste .

A visitor described the valley around Lhasa in 1889 as follows ,

The plain over which we are riding is a wonderfully fruitful one . It is skirted on the south by the Kyi river , and is watered , moreover , by another smaller stream from the north , which flows into the Kyi ... some five miles west of Lhasa . All this land is carefully irrigated by means of dikes and cross @-@ channels from both rivers . Fields of buckwheat , barley , pea , rape , and lindseed lie in orderly series everywhere . The meadows near the water display the richest emerald @-@ green pasturage . Groves of poplar and willow , in shapely clumps , combine with the grassy stretches to give in places a parklike appearance to the scene . Several hamlets and villages , such as Cheri , Daru , and Shing Dongkhar , are dotted over these lands . A fertile plain truly for a besieging army !

The Lhasa region does not have abundant wildlife or great numbers of species , but the Lhasa valley does support wintering populations of hundreds of black @-@ necked cranes . Hutoushan Reservoir lies in Qangka Township , Lhünzhub County . The reservoir is bordered by large swamps and wet meadows , and has abundant plants and shellfish . The reservoir , which lies in the Pengbo valley , is the largest in Tibet , with total storage of 12 @, @ 000 @, @ 000 cubic metres (420 @, @ 000 @, @ 000 cu ft) . Endangered black @-@ necked cranes migrate to the middle and southern part of Tibet every winter , and may be seen on the reservoir and elsewhere in the Lhasa region . Other wildlife includes bharal , pheasants , roe deer , Thorold 's deer , Mongolian gazelle , Siberian ibex , otter , brown bear , snow leopard and duck . Medicinal plants include fritillaries (fritillaria) , stonecrop (rhodiola) , Indian barberry (berberis aristata) , Chinese caterpillar fungus (ophiocordyceps sinensis) , codonopsis and Lingzhi mushroom (ganoderma) .

The dams on the Lhasa river built as part of the Three Rivers Development Project are unlikely to affect the flow of the Brahmaputra in India . However , the climate and soil are unsuitable for large @-@ scale irrigation . Where grasslands have been converted into irrigated farms fed by dams the result may damage the environment . Jama wetland in Maizhokunggar County is vulnerable to grazing and climate change . Extensive mining in some mountainous regions have turned areas of what was green pasturage into a grey wasteland . The authorities are reported to have suppressed protests by the local people . Military personnel have been involved in efforts to protect and improve the environment , including replanting programs .

A 2015 study reported that during the non @-@ monsoon season the levels of arsenic in the Duilong River , at 205 @. @ 6 ?g / L were higher than the WHO guideline of 10 ?g / L for drinking water . The source of the pollution seems to be untreated water from the Yangbajain Geothermal Field power station . It can be detected 90 kilometres (56 mi) downstream from this site .

= = Administrative divisions = =

Lhasa prefecture @-@ level city consists of two district and six counties . Chengguan District and Doilungdêqên District contains most of the urban area of Lhasa , which lies in the Lhasa River valley floor .

= = = Chengguan District = = =

Chengguan District is located on the middle reaches of the Lhasa River , with land that rises to the north and south of the river . It is 28 kilometres (17 mi) from east to west and 31 kilometres (19 mi) from north to south . Chengguan District is bordered by Doilungdêqên District to the west , Dagzê County to the east and Lhünzhub County to the north . Gonggar County of Lhoka (Shannan) Prefecture lies to the south . Chengguan District has an elevation of 3 @, @ 650 metres (11 @, @ 980 ft) and covers 525 square kilometres (203 sq mi) . The urban built @-@ up area covers 60 square kilometres (23 sq mi) . The average annual temperature is 8 ° C (46 ° F) . Annual precipitation is about 500 millimetres (20 in) , mostly falling between July and September .

Before the Chinese takeover the city of Lhasa had a population of 25 @, @ 000 ? 30 @, @ 000 , or 45 @, @ 000 ? 50 @, @ 000 if the large monasteries around the city are included . The old city formed a quadrangle about 3 square kilometres (1 @. @ 2 sq mi) around the Jokhang temple , about 1 kilometre (0 @. @ 62 mi) to the east of the Potala Palace . During the period before the reforms introduced by Deng Xiaoping the old city of Lhasa was left largely intact , while bleakly functional compounds containing symmetrical dormitory @-@ type buildings for both living and working were built apart from the city along the main roads .

By 1990 the city had expanded to cover 40 square kilometres (15 sq mi) , with an official population of 160 @, @ 000 . The 2000 official census gave a total population of 223 @, @ 001 , of which 171 @, @ 719 lived in the areas administered by sub @-@ districts and residential committees . 133 @, @ 603 had urban registrations and 86 @, @ 395 had rural registrations , based on their place of origin . By 2013 the urban area filled most of the natural Lhasa River valley in Chengguan District . A 2011 book estimated that up to two @-@ thirds of the city 's residents are non @-@ Tibetan , although the government states that Chengguan District as a whole is still 63 % ethnic Tibetan .

= = = Doilungdêqên District = = =

Doilungdêqên District contains the western suburbs of the city of Lhasa , which begin about 12 kilometres (7 @. @ 5 mi) from the city center . It covers an area of 2 @, @ 704 square kilometers , with 94 @, @ 969 acres of farmland . The county borders on the north Tibet grasslands in the northwest . The valley of the Duilong River leads south to the Lhasa River . The Duilong is 95 kilometres (59 mi) in length . In the south the county occupies part of the south bank of the Lhasa River . The county has an average elevation of 4 @, @ 000 metres (13 @, @ 000 ft) , with a highest

elevation of 5 @, @ 500 metres (18 @, @ 000 ft) and a lowest point at 3 @, @ 640 metres (11 @, @ 940 ft) .

There are about 120 frost @-@ free days annually . Annual mean temperature is 7 ° C (45 ° F) , with temperatures in January falling below ? 10 ° C (14 ° F) Annual precipitation is about 440 millimetres (17 in) , with autumn rainfall of 310 millimetres (12 in) . The county is agriculturally rich and was used by the Tibetan kings as a source of food for Lhasa .

The seat of government is in the town of Donggar . This is just 14 kilometres (8 @. @ 7 mi) from downtown Lhasa . In 1992 there were 33 @, @ 581 people in 6 @, @ 500 households , with 94 @. @ 28 % of the people engaged in farming . About 90 % of the people were ethnic Tibetan , with most people of other ethnicity living in Donggar . The main mineral resources are coal , iron , clay , lead and zinc . Tsurphu Monastery , built in 1189 , is treated as a regional cultural relic reserve . The Nechung Monastery , former home of the Nechung Oracle , is located in Naiquong township . Nechung was built by the 5th Dalai Lama (1617 ? 82) .

= = = Dagzê County = = =

Dagzê County has a total area of 1 @, @ 373 square kilometres (530 sq mi) . It has an average elevation of 4 @, @ 100 metres (13 @, @ 500 ft) above sea level , and descends from higher ground in the north and south to 3 @, @ 730 metres (12 @, @ 240 ft) in the lowest part of the Lhasa river valley . The average temperature is 7 @. @ 5 ° C (45 @. @ 5 ° F) , with about 130 days free of frost . Average rainfall is 450 millimetres (18 in) . About 80 % ? 90 % of precipitation falls in the summer .

As of 2013 the total population was 29 @, @ 152 . The main occupation is agriculture . As of 2012 per capita income of farmers and herdsmen was 6 @, @ 740 yuan . In 2010 there were 28 schools in the county , including one junior high school and one kindergarten , with 276 full @-@ time teachers . There is a county hospital and five township hospitals . The Sichuan @-@ Tibet Highway (China National Highway 318) runs through the county . The main monasteries in Dagzê are Ganden Monastery and Yerpa .

= = = Damxung County = = =

Damxung County has an area of 10 @, @ 036 square kilometres (3 @, @ 875 sq mi) , with rugged topography . As of 2013 the population was 40 @, @ 000 , up from 35 @, @ 000 in 1997 . It is tectonically active . On 6 October 2008 an earthquake measuring 6 @. @ 6 on the Richter magnitude scale was reported . In November 2010 a moderate quake in Damxung at 5 @. @ 2 on the Richter scale shook office windows in Lhasa . There were no casualties , but houses were damaged .

In the extreme northeast of the county , Namtso lake has an area of 1 @, @ 920 square kilometres (740 sq mi) , of which 45 % lies in Damxung county . Namtso is one of the great lakes of the Tibetan plateau . The Nyenchen Tanglha (or Nyainqentanglha) mountains extend along the northwest of the county . Mount Nyenchen Tanglha is the highest peak in the region , at 7 @, @ 111 metres (23 @, @ 330 ft) . The Nyainqentanglha mountains define the watershed between northern and southern Tibet . A valley with elevation of about 4 @, @ 200 metres (13 @, @ 800 ft) runs parallel to the mountains to their southeast , sloping from northwest to southeast . 30 % of the county 's total area is in the prairie of this valley .

Damxung is cold and dry in the winter , cool and wet in summer , with very variable weather . The average annual temperature is 1 @. @ 3 ° C (34 @. @ 3 ° F) , with only 62 frost @-@ free days . The land is frozen from the start of November to the following March . Pasture has 90 ? 120 days for growth . Average annual precipitation is 481 millimetres (18 @. @ 9 in) . Natural grasslands cover 693 @, @ 171 hectares (1 @, @ 712 @, @ 860 acres) , of which 68 % is considered excellent . Almost all the people are engaged in rearing livestock , including yaks , sheep , goats and horses .

The Qinghai @-@ Tibet Highway (China National Highway 109) runs from east to west across the county . Damxung Railway Station links the county to the city of Lhasa to the south . There is a large

geothermal field at Yangbajain harnessed by generating units that deliver 25 @, @ 181 kilowatts to the city of Lhasa to the south . The transmission line follows the Duilong River south through Doilungdêqên District . Kangma Monastery is 16 kilometres (9 @, @ 9 mi) from the county seat . The meditation room has 1 @, @ 213 carved stone reliefs of Buddha that are about three hundred years old . Yangpachen Monastery in Yangbajain is historically the seat of the Shamarpas of Karma Kagyu . The monastery was destroyed during the Cultural Revolution , but later was rebuilt .

= = = Lhünzhub County = = =

Lhünzhub County is located around 65 km (40 mi) northeast of metropolitan Lhasa . It includes the Pengbo River Valley and the upper reaches of the Lhasa River . It covers an area of 4 @, @ 512 km² (1 @, @ 742 sq mi) . The county is geologically complex , with an average elevation of 4 @, @ 000 metres (13 @, @ 000 ft) . The administrative center is the town of Lhünzhub .

As of 2000 the county had a total population of 50 @, @ 895 , of which 8 @, @ 111 lived in a community designated as urban . 2 @, @ 254 had non @-@ agricultural registration and 48 @, @ 362 had agricultural registration . In the south the Pengbo valley has an average elevation of 3 @, @ 680 metres (12 @, @ 070 ft) with a mild climate . The average temperature is 5 @. @ 8 ° C (42 @. @ 4 ° F) . The northern " three rivers " section , crossed by the Lhasa River and its tributary the Razheng River , is mountainous and has an average elevation of 4 @, @ 200 metres (13 @, @ 800 ft) . It has average annual temperature of 2 @. @ 9 ° C (37 @. @ 2 ° F) and is mostly pastoral , with yak , sheep and goats .

The Pengbo valley is the main grain @-@ producing region of Lhasa prefecture @-@ level city and Tibet , with a total of 11 @, @ 931 hectares (29 @, @ 480 acres) of arable land . Crops include barley , winter wheat , spring wheat , canola and vegetables such as potato . Livestock includes yak , sheep , goats and horses . In 2010 the per capita income of farmers and herdsmen was 4 @, @ 587 yuan . The Pengbo valley has a long history of pottery @-@ making . Products include braziers , flower pots , vases and jugs . Mining is an important source of income . In 2011 the government has plans to more actively promote tourism . The Pangduo Hydro Power Station became operational in 2014 . It has been called the " Tibetan Three Gorges " .

The county is a center of Tibetan Buddhism . There were thirty @-@ seven gompas including twenty @-@ five lamaseries with 919 monks and twelve nunneries with 844 nuns as of 2011 . Reting Monastery was built in 1056 by Dromtön (1005 ? 1064) , a student of Ati?a . It was the earliest monastery of the Gedain sect , and the patriarchal seat of that sect .

= = = Maizhokunggar County = = =

Maizhokunggar County is located on the middle and upper sections of the Lhasa River and the west of Mila Mountain . Mila (or Mira) Mountain , at 5 @, @ 018 metres (16 @, @ 463 ft) , forms the watershed between the Lhasa River and the Nyang River . The Gyama Zhungchu , which runs through Gyama Township , is a tributary of the Lhasa River . Maizhokunggar County is about 68 kilometres (42 mi) east of Lhasa , has an area of 5 @, @ 492 square kilometres (2 @, @ 120 sq mi) with an average elevation of more than 4 @, @ 000 metres (13 @, @ 000 ft) . The annual average temperature is 5 @. @ 1 to 9 @. @ 1 ° C (41 @. @ 2 to 48 @. @ 4 ° F) . There are about 90 frost @-@ free days each year . Annual rainfall is 515 @. @ 9 millimetres (20 @. @ 31 in) . China National Highway 318 runs through the county from east to west . The 100 MW Zhikong Hydro Power Station on the Lhasa River came into operation in September 2007 .

The total population as of 2010 was 48 @, @ 561 people in 9 @, @ 719 households , the great majority engaged in farming and herding . 98 % of the population are ethnic Tibetan . The seat of government is in Kunggar in the west of the county . Many of the people depend on farming or herding . Development efforts include increased farm animal husbandry , feedstock production , greenhouses for vegetables , and breeding programs . Crops include barley , winter wheat , spring wheat , canola , peas , cabbage , carrots , eggplant , cucumbers , lettuce , spinach , green peppers , pumpkins , potatoes and other greenhouse crops . The economy is driven by mineral extraction ,

which was expected to account for 73 % of total tax revenue in 2007 while employing 419 people .

Traditional folk handicrafts include pottery , willow basketwork , wooden objects , mats and gold and silver items . The county is especially noted for its pottery , which does not corrode , retains heat and has an ethnic style . It has a more than 1000 year old history . The Drikhung Thil Monastery of the Kagyu Sect was founded in 1179 by Lingchen Repa , a disciple of Phagmo Drupa . The monastery is the home of the Drikhung Kagyu School of the Kagyu sect . The ruined Gyama Palace , in the Gyama Gully in the south of the county , was built by Namri Songtsen in the 6th century after he had gained control of the area from Supi .

== Nyêmo County ==

Nyêmo County is located in the middle section of the Brahmaputra , 140 kilometres (87 mi) from Lhasa . It is mainly agricultural and pastoral , with an area of 3 ,276 square kilometres (1 ,265 sq mi) and an average elevation of 4 ,000 metres (13 ,000 ft) . The Nimu Maqu River flows through the county from north to south . The Yarlung Tsangpo River forms its southern boundary . The highest point is a peak at 7 ,048 metres (23 ,126 ft) above sea level , and the lowest point is where the Maqu River empties into the Brahmaputra at an elevation of 3 ,701 metres (12 ,142 ft) . The county has a temperate semi arid plateau monsoon climate , with about 100 frost free days . Annual rainfall is 324 mm (12 .76 in) .

Nyêmo County has its headquarters in Nyêmo Town . The county seat is 3 ,809 metres (12 ,497 ft) above sea level . As of 2011 the total population was 30 ,844 people , of whom 28 ,474 were engaged in agriculture or herding . By 2012 the per capita income of farmers and herdsmen had reached 6 ,881 yuan . In the 7th century Nyêmo was producing printing materials , clay based incense and wooden sole shoes . Nyêmo 's long tradition of making paper and printing texts using woodblocks dates back to this period . Nyêmo County has China 's first museum of Tibetan text . There are 22 temples . As of 2011 there were 118 monks and 99 nuns . The Nyêmo Chekar monastery is known for its 16th century murals depicting reincarnations of the Samding Dorje Phagmo .

== Qüxü County ==

Qüxü County has a total area of 1 ,680 square kilometres (650 sq mi) , with an average elevation of 3 ,650 metres (11 ,980 ft) . The county is in the Yarlung Tsangpo valley , and is mostly relatively flat , but rises to the Nyainqêntanglha Mountains in the north . The Lhasa River runs south through the eastern part of the county to its confluence with the Yarlung Tsangpo River , which forms the southern boundary of the county . The lowest elevation is 3 ,500 metres (11 ,500 ft) , and the highest summit elevation is 5 ,894 metres (19 ,337 ft) . Qüxü County has about 150 days a year without frost . Annual precipitation is 441 mm (17 .40 in) .

Qüxü County has its headquarters in Qüxü Town . The fifth census in 2000 recorded a population of 29 ,690 . The county seat has been growing fast , and had 5 ,000 people by 2002 . China National Highway 318 runs through Qüxü County from Lhasa towards the west . Bridges span the Lhasa River and the Yarlung Tsangpo River .

Qüxü County is semi agricultural and crops grown are mainly highland barley , winter wheat , spring wheat , peas and rapeseed . Apples and walnuts are also produced . Animal husbandry is also strong , with the main animals farmed including yak , cattle , goats , sheep , horses , donkeys , pigs , and chickens . As of 2002 the per capita net income of farmers and herdsmen was 1 ,960 yuan . The Nyethang Drolma Lhakhang Temple is located in Qüxü County , said to have been founded in 1055 by Dromtön , a pupil of Atiṣa .

== Demographics ==

The demographics of Lhasa prefecture @-@ level city are difficult to define precisely due to the way in which administrative boundaries have been drawn , and the way in which statistics are collected . The population of Lhasa prefectural @-@ level city is about 500 @,@ 000 , of whom about 80 % are ethnic Tibetan and most of the others are ethnic Han Chinese . Approximately 250 @,@ 000 people live in the city and in towns , most of them in or near Chengguan District , and the remainder live in rural areas .

= = = Ethnicity = = =

The 2000 census give the following breakdown for the population of the prefecture @-@ level city as a whole :

The 2000 census counts more than 105 @,@ 000 people in Chengguan District who are registered elsewhere . Most of them are Han , with agricultural registrations . Outside Chengguan District , in 2000 the rural townships almost all had Han populations below 2 @.@ 85 % , other than one in Duilongdeqing County and one in Qushui County , both near the metropolitan district of Lhasa . Urban towns other than Yangbajain had Han populations of between 2 @.@ 86 % and 11 @.@ 25 % . Within the metropolitan district Han population ranged from 11 @.@ 26 % to 11 @.@ 25 % in the southern rural township to 46 @.@ 56 % to 47 @.@ 46 % in the city street offices . Han migrants accounted for 20 % of the population , but held a much higher percentage of the higher @-@ status office and service @-@ sector jobs . Hans also dominated construction , mining and trade .

According to the November 2000 census , the ethnic distribution in Lhasa Prefecture @-@ level City was as follows :

= = = Administrative divisions = = =

Lhasa metropolitan district includes most of the built @-@ up area , which counts as urban , and four rural townships . The counties also contain urban towns , of which there are nine in the prefectural municipality .

Official census figures for 2000 are :

The census figures differ considerably from the Tibet Statistical Yearbooks for the same period , since the yearbook only includes the registered population and counts them based on place of origin rather than place of residence . The 1990 census used an approach similar to the yearbook , so the numbers are misleading , but the 2000 census tried to count people who had actually been present in Lhasa for over six months . The census distinguishes between " agricultural " and " non @-@ agricultural " registration , but this does not reflect the actual occupations of the people . Many with an " agricultural " registration may in fact work in the city or in a town . Also , the census was taken in November , when many of the ethnic Han workers in seasonal industries such as construction would have been away from Tibet . Finally , the census does not count the military .

= = Infrastructure = =

= = = Highways = = =

China National Highway 318 enters the prefecture @-@ level city from the east at Mila Mountain , where it reaches an elevation of 5 @,@ 000 metres (16 @,@ 404 ft) . The highway runs through Maizhokunggar County from east to west . It continues along the south bank of the Lhasa River through Dagzê County , then crosses to the north of the river in Chengguan District and runs through the center of the urban district . It turns south to cross Doilungdêqên District , where it is joined by 109 , and continues down the west side of the Lhasa River through Qüxü County , and then along the north shore of the Yarlung Tsangpo through Nyêmo County , and onward to the west

China National Highway 109 (the Qinghai ? Tibet Highway) runs through Damxung County from the northeast to southwest , then turns to the southeast at Yangbajain . It then runs through Doilungdêqên District along the Duilong River valley , to join China National Highway 318 just west of Lhasa . The Lhasa Airport Expressway from Lhasa to Lhasa Gonggar Airport in Lhoka (Shannan) Prefecture is the first expressway in the Tibet Autonomous Region . Construction began in April , 2009 . The expressway is 37 @. @ 8 kilometres (23 @. @ 5 mi) long and has four lanes .

== = Railroad == =

The Qinghai ? Tibet Railway runs through the Lhasa prefecture @-@ level city beside the Qinghai ? Tibet Highway through Damxung County and Doilungdêqên District . It terminates at Lhasa Railway Station in Niu New Area (Liuwu Township) . The terminus of the Qinghai ? Tibet line , this station is over 3 @, @ 600 metres (11 @, @ 800 ft) above sea level , and is its largest passenger transport station . It includes a clinic with oxygen treatment facilities . The station uses solar energy for heating . The Liuwu Bridge links central Lhasa to Lhasa Railway Station and the newly developed Niu New Area of Doilungdêqên District on the south bank of the Lhasa River . Residents in the area were resettled to make way for the new development .

== = Power == =

The Yangbajain Geothermal Station was established in 1977 to exploit the Yangbajain Geothermal Field in Damxung . It is the first geothermal power station to be built in Tibet and is the largest geothermal steam power plant in China . 4 @, @ 000 kW of electricity from Yangbajain began to be delivered to Lhasa in 1981 along a transmission line that followed the Doilung Qu River . It was the main power supply for Lhasa until the Yamdrok Hydropower Station came into operation . By the end of 2000 eight steam turbo generators had been installed at the Yangbajain Geothermal Station , each with capacity of 3 @, @ 000 kW , giving a total of 25 @, @ 000 kW . The geothermal field delivers 25 @, @ 181 kilowatts , or 100 million kilowatts annually , to the city of Lhasa to the south .

The Pangduo Hydro Power Station has been called " Tibet 's Three Gorges Dam " . It impounds the Lhasa River in Pondo Township of Lhünzhub County , about 63 kilometres (39 mi) from Lhasa . It is at an elevation of 13 @, @ 390 feet (4 @, @ 080 m) above sea level , upstream from the 100MW Zhikong Dam at 12 @, @ 660 feet (3 @, @ 860 m) . The rock @-@ fill dam impounds 1 @, @ 170 @, @ 000 @, @ 000 cubic metres (4 @. @ 1 × 10¹⁰ cu ft) of water . The power station has total installed capacity of 160 MW .

The Zhikong Hydro Power Station lies between the middle and lower reaches of the Lhasa River , also called the Kyi River . It is about 100 kilometres (62 mi) northeast of Lhasa , in Maizhokunggar County . It is at an elevation of 12 @, @ 660 feet (3 @, @ 860 m) above sea level , downstream from the Pangduo Hydro Power Station . The Zhikong Dam , a rock @-@ fill dam , is 50 metres (160 ft) tall . It impounds 225 @, @ 000 @, @ 000 cubic metres (7 @. @ 9 × 10⁹ cu ft) of water . Installed capacity is 100 MW .

== = Other facilities == =

The rural counties generally have numerous primary schools at the village level , with high levels of attendance , and at least one secondary school . In 2010 there were 28 schools in Dagzê County , including one junior high school and one kindergarten . As of 2009 there were 37 primary and secondary school buildings in Damxung County . Maizhokunggar County has one high school , 14 full primary schools and 74 village schools . Nyêmo County has 24 primary and secondary schools , including one junior high school . As of 2002 Qüxü County had one County Middle School , and 18 primary schools . Outside Lhasa most of the Tibetans do not understand the Chinese language , so Tibetan is the natural language for basic instruction . However , this may be affected by the availability of teachers and the preference of the local administration . As of 2003 the former

bilingual mode of instruction had been changed to giving instruction in Chinese in some of the counties near Lhasa . Examination results were already poor in subjects such as mathematics and physics . Marks dropped further after the change .

Some of the township seats have a small clinic . Most have only a health station , usually poorly supplied . There is a county hospital and five township hospitals in Dagzê County . There were seven hospitals in Damxung in 2009 , including a county hospital , with a total of 40 beds . The first drug rehabilitation center in Tibet was being constructed in Duilongdeqing County in 2009 . It was planned to provide physiological rehabilitation , psychological therapy and job training for up to 150 drug addicts . Lhünzhub County has 23 health care establishments , including a County People 's Hospital with 30 beds . Maizhokunggar has been selected as a Cooperative Medical System experimental site , which has resulted in a very high percentage of people with health care coverage . Nyêmo County has a county hospital with 42 medical staff , eight rural health centers and 26 village clinics .

The local television stations are Xizang TV (XZTV) and Lhasa Broadcasting and Television Center . Lhünzhub County has a local radio and television station . TV coverage is received by 72 @. @ 1 % of the population , and radio by 83 @. @ 4 % of the population . In Maizhokunggar County television is available to 36 % of the population and radio to 48 % . There is a county television station in Nyêmo County . As of 2002 in Qüxü County 98 % of the population received radio coverage and 94 % received television . In 2015 there were 359 @, @ 000 fixed line telephone subscribers in the whole of Tibet . The rugged high @- @ altitude terrain makes it expensive to provide telecommunications services . The first mobile phone service was launched in 1993 with just one base station in Lhasa , and as late as 2005 mobile phones were expensive status symbols . Since then both mobile phones and internet usage have grown fast .

As of 1996 the sole prison (jianyu) for judicially @- @ sentenced political prisoners in Tibet was TAR Prison No. 1 , also called Drapchi Prison after the neighborhood in Lhasa where it stands . It is for men serving sentences of five or more years . There is a labor camp (laogai) in Lhasa for men serving shorter sentences . There are various other institutions where prisoners from Lhasa shi are held while they are being investigated , or where they undergo reform @- @ through @- @ labor .

= = Temples and monasteries = =

Buddhism was adopted as the official religion of Tibet by king Songtsän Gampo (died 649) at a time when the rise of Hinduism was sweeping away Buddhism in India , the land of its birth . Over the next two centuries Buddhism became established in Tibet , now the center of the religion . Tibetan Buddhism would become a pervasive influence on the lives of the people . The first monastery , Samyé , was founded by Trisong Detsen (c . 740 ? 798) . Its buildings were arranged in a mandala pattern after the Odantapuri monastery in Bihar . The three @- @ story monastery was completed in 766 and consecrated in 767 . Seven Tibetans took monastic vows in a ceremony that marked the start of the long Tibetan tradition of monastic Buddhism .

= = = Early foundations = = =

Yerpa , on a hillside in Dagze County , is known for its meditation cave connected with Songtsän Gampo . The cliffs contain some of the earliest known meditation sites in Tibet , some dating back to pre @- @ Buddhist times . There are a number of small temples , shrines and hermitages . Songtsän Gampo 's queen , Monza Triucham , founded the Dra Yerpa temple here . Jokhang in Chengguan District is the most sacred temple in Tibet , built in the 7th century when Songtsän Gampo transferred his capital to Lhasa . It was designed to house an image of Buddha that the Nepalese queen Tritsun had brought . Later rulers and Dalai Lamas enlarged and elaborated the temple .

Ramoche Temple to the north of Jokhang is considered the most important temple in Lhasa after Jokhang , and was completed about the same time . Muru Nyingba Monastery is a small monastery located between the larger Jokhang temple and Barkhor in the city of Lhasa . It was the Lhasa seat of the former State Oracle who had his main residence at Nechung Monastery . It was destroyed

during the persecution of Buddhism under Langdarma (c . 838 ? 841) but rebuilt by Ati?a (980 ? 1054) . The monastery was part of the Sakya sect at one time. but became Gelug under Sonam Gyatso , the 3rd Dalai Lama (1543 ? 89) .

= = = Middle period = = =

The Nyethang Drolma Temple is southwest of Lhasa , 36 kilometres (22 mi) from the county seat and 33 kilometres (21 mi) from Lhasa . It is in Nyétang , Qüxü County . Some sources say that Ati?a (980 ? 1054) built the monastery , which was expanded after his death by his pupil Dromtön (1004 ? 64) . Another version says that Dromtön raised funds to build the temple to commemorate his old friend . Dromtön built Reting Monastery in Lhünzhub County in 1056 . It was the earliest monastery of the Gedain sect , and the patriarchal seat of that sect . In 1240 a Mongol force sacked Reting monastery and killed 500 people . The gumpa was rebuilt . When the Gedain sect joined the Gelug sect in the 16th century the monastery adopted the reincarnation system .

Tsurphu Monastery in Doilungdêqên District was built in 1189 and is treated as a regional cultural relic reserve . The monastery was founded by Düsum Khyenpa , 1st Karmapa Lama , founder of Karma Kagyu school . It is the main Kagyu temple . The Drigung Monastery of the Kagyu Sect was founded in 1179 in Maizhokunggar County . It is the home of the Drikhung Kagyu School of the Kagyu sect . At one time Drigung was highly influential in both the political and religious spheres . It was destroyed in 1290 by Mongols led by a general from the rival Sakya sect , and although rebuilt was never able to regain its power .

Yangpachen Monastery in Yangbajain , Damxung County was historically the seat of the Shamarpas of Karma Kagyu . It is the main monastery of the Red Hat school of the Karma Kagyu sect . It was built in 1490 , and through extensive repairs and additions grew into a major architectural complex that contained a large collection of cultural relics . The Red Hat school of Karma Kagyu died out in 1791 . Other monasteries founded outside the Gelug tradition include Taklung Monastery of the Kagyu school , founded in 1180 in Lhünzhub County , and Nyêmo Chekar monastery of the Bodongpa school , founded in the 16th century in Nyêmo County .

= = = Gelug foundations = = =

Ganden Monastery was built after 1409 at the initiative of Je Tsongkhapa , founder of the Gelug sect , and is the most important of this sect . It is 57 kilometres (35 mi) from Lhasa on the slopes of Wangbori Mountain at an elevation of 3 @, @ 800 metres (12 @, @ 500 ft) , on the south bank of the Lhasa River in Dagze County . The mountain is said to have the shape of a reclining elephant . The monastery includes Buddha halls , palace residences , Buddhist colleges and other buildings .

Drepung Monastery in Chengguan District was founded in 1416 by Jamyang Choge Tashi Palden (1397 ? 1449) , one of Tsongkhapa 's main disciples . It was named after the sacred abode in South India of Shridhanyakataka . At one time Drepung Monastery , with up to 10 @, @ 000 resident monks , was the largest in the world . Sera Monastery was not much smaller . Sera Monastery , about 2 miles (3 @. @ 2 km) north of Lhasa , was founded in 1419 by Jamchen Chöjé Shakya Yeshé (1354 ? 1435) , a close disciple of Tsongkhapa . Ganden , Drepung and Sera are called the great " Three Seats of Learning " of the Gulugpa school .

The Nechung Monastery , former home of the Nechung Oracle , is located in Naiquong township , also in Duilongdeqing County . Nechung was built by the 5th Dalai Lama (1617 ? 82) . Other Gelug foundations include Sanga Monastery (1419 , Dagzê County) , Ani Tsankhung Nunnery (15th century , Chengguan District) , Kundeling Monastery (1663 , Chengguan District) , and Tsomon Ling (17th century , Chengguan District) .

= = = Revolution and reconstruction = = =

Most of the monasteries in the prefecture @-@ level city suffered damage , and many were destroyed , before and during the Cultural Revolution (1966 ? 76) . Jokhang was used as a military

barracks and a slaughterhouse during the Cultural Revolution , and then as a hotel for Chinese officials . Many of the statues were taken , or were damaged or destroyed , so most of the present statues are recent copies . Jokhang was designated a UNESCO World Heritage Site in 2000 . Ramoche Temple was badly damaged during the Cultural Revolution but has been restored with assistance from the Swiss . The Nyethang Drolma Temple survived the Cultural Revolution without much damage , and was able to preserve most of its valuable artifacts , due to the intervention of Premier Zhou Enlai at the request of the government of what is now Bangladesh .

Reting Monastery was devastated by the Red Guards during the Cultural Revolution , and has only been partially restored . Tsurphu monastery was reduced to rubble , but the huge temples and chanting halls have been rebuilt . Before and during the Cultural Revolution (1966 ? 76) Drigung Monastery was looted of almost all its collection of statues , stupas , thangkas , manuscripts and other objects apart from a few small statues that the monks managed to hide . The buildings were severely damaged . Reconstruction began in 1983 and seven of the fifteen temples were rebuilt . Yangpachen Monastery was destroyed during the Cultural Revolution , but later was rebuilt .

Ganden Monastery was completely destroyed during the rebellion of 1959 . In 1966 it was severely shelled by Red Guard artillery , and monks had to dismantle the remains . The buildings were reduced to rubble using dynamite during the Cultural Revolution . Re @-@ building has continued since the 1980s . Nechung was almost completely destroyed but has been largely restored . There is a huge new statue of Guru Rinpoche (Padmasambhava) on the second floor .

Nine sites in the Lhasa valley were listed in 1985 by the TAR Cultural Relics Authority as " regionally protected buildings " . These were Tsangkung Nunnery , Meru Monastery and Great Kashmiri Mosque in the old city , and the Karmashar Temple , Meru Nyingba Monastery and Northern , Southern , Eastern and Western Rigsum Temples elsewhere in the former prefecture .