

Panda 100 Q&As-Answer Sheet

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Developed date: November 2008

Part 1

1. How long does a panda spend eating bamboo every day in the wild?

According to research, a wild panda spends 10-14 hours eating bamboo every day. Its activity pattern is: 21:00-2:00, resting (sleeping at night); 2:00-7:00, foraging (breakfast); 7:00-10:30, resting; 10:30-11:00, wandering and playing; 11:00-12:00, foraging (lunch); 12:00-14:30, resting; 14:30-21:00, foraging (supper);

2. On average, how much bamboo does a panda eat every day in spring?

Pandas live in severe, cold areas, in which spring is from April to June, summer-autumn is from July to October, and the rest of the year is winter. In spring, pandas live on tender bamboo shoots, and they eat 30-60Kg bamboo shoots per day, (40kg on average), which is the biggest amount of the year. In summer, the main food is the stems of bamboo, as well as some old bamboo shoots and new leaves. Autumn is the most luxuriant period of new leaves, and therefore, pandas live on the new leaves. The nutrition of these new leaves is higher than other parts of bamboo, and the crude fiber is lower than that of the stem. For this reason, pandas just need to eat 11-13Kg of them per day; the home range is the smallest of the year, which thereby saves energy used by the panda.

3. According to records, how long can a captive panda live for?

In the wild, pandas can live for 20 years, and in a captive environment, they can live more than 30 years. A female panda in Wuhan Zoo lived for 37 years, which makes her the longest living panda.

4. Is the panda genetically closer to the bear or the cat?

The panda is genetically closer to the bear.

5. What kind of habitat does a wild panda prefer in summer?

In the wild, pandas like mixed broadleaf-conifer forest or forests with certain conditions of shade density, because under this kind of forest grows luxuriant bamboo—their favorite food. Moreover, pandas like to live in relatively smooth mountain slopes, so that they can minimise energy consumption while moving around. Finally, it is important that there are streams to drink from around the panda's home range.

6. Do pandas have any natural enemies?

Yes, they do have natural enemies, such as dholes and leopards.

7. Do pandas live alone or in a group?

Throughout most of the pandas life, it lives alone in its home range. Usually, the home range of a

male panda is 3-15km², with the range of a female being relatively smaller, about 3-7km². In the mating season, males will get together and fight each other for the mating rights with females. After mating, the group will part and they will live alone again. Even the cubs will leave their mother when they are 1.5-2.5 years old, and live by themselves.

8. Are pandas vegetarians?

In the classification system of animals, the panda is listed in the group of 'carnivore', although its main food is herbivorous. In the wild, 99% of their diet consists of stems, leaves, and branches of bamboo, and sometimes parts of other plants and animals. In the captive environment, pandas also eat honey, bird eggs, sweet potato, leaves, oranges, and bananas.

9. Who was the first person to introduce pandas to the Western world?

When we talk about the "finding" of pandas, we think of Pere David, the French missionary. But the more accurate description is that "he introduced panda to westerners". At that time, most westerners didn't think there was such a special animal whose appearance is so "odd": its body size is the same as a bear, but with black and white colors; its head is white-colored, with two black eye-sockets; its black fur on the forelegs and hind legs is separated by white fur on its back and belly; its tail is broad and flat, almost as if there is no tail.

Actually, in China, people had known about the existence of pandas since the Western Zhou Dynasty, 3000 years ago. The famous geographical work *The Classic of Mountains and Rivers* written 2700 years ago told about the distribution of pandas: "It looks like a bear but is white and black.....and is distributed in the south of Yandao county, Qionglai Mountain." Since there was no systematic taxonomy in ancient times, the panda had a series of local names, such as Pi, Pixiu, Mo, etc. "Panda", as a modern name of this special species, was not recorded until 1930, when China exhibited a panda for the first time in a zoo in Chongqing, with the sign saying "Panda" in both Chinese and English.

10. Do pandas hibernate?

Pandas don't hibernate like some animals, such as the Polar bear. Since bamboo is evergreen, pandas can live on it through the cold winter months.

11. How much does a mature wild panda weigh?

The panda is as plump as a bear. According to research, a wild panda usually weighs between 60-73kg, with a maximum of 110kg. A panda in captivity usually weighs between 80-125kg, with a maximum of 180kg! The body length of a mature panda is about 1.2-1.8m; the shoulder height is 65-75cm; the chest circumference is 87-89cm; the buttock height is 64-65cm; the ear length is 7.2-11.5cm; and the tail length is 11.5-20cm. Generally speaking, females are heavier than males. New born cubs are 36-296g - just 1/900 of their mother's weight.

12. How do pandas live through the winter?

In winter, pandas usually move from high altitude to median and low altitude areas, where the temperature is higher and the food resources are more abundant.

13. Can pandas swim?

Pandas are good swimmers. When it is hot, they will go through rivers, play with water and swim in the cool streams. They also can swim in deep water for a long time, which is an important skill for them to use during migration in difficult terrain.

14. What animals do pandas have as neighbours in the wild?

In the wild habitat of the panda, there are lots of other rare animals, such as the Red (or Lesser) panda, Takin, Golden monkey, Crested Ibis, Blood pheasant and Blue eared pheasant.

15. How many fingers do pandas have on each hand?

Pandas have 5 fingers on each hand. But during their long period of evolution, the sesamoid bone of their great toe has enlarged to become a “fake great toe” which looks like a sixth finger. This “fake great toe” can move flexibly and independently from the fingers, and this particular evolutionary adaptation helps pandas to hold the bamboo more tightly.

16. Is the pandas' coat only composed of white and black fur?

Most panda's are white and black; its eye-sockets, ears, and legs are black, while other parts are white; However, there are a few brown individuals found in the Qinling Mountains. In the habitat of the panda, the shade of trees is mottled white and black when the sun shines down on the forest. It is therefore possible that the panda evolved to have white and black fur so that it is better camouflaged in this dappled shade from their natural enemies. There are other theories for their colouring, such as the bright color helping them to find each other.

17. Can pandas climb trees?

Pandas are excellent at climbing trees. When the cubs reach six months old, they can climb trees following their mothers, living and sleeping in the tree. When the female gives birth to and takes care of a cub, it will live in rock caves or tree caves.

18. Do pandas have a tail?

Pandas have a black tail which is 10-15cm long, although they often hold it between their buttocks, making it difficult to see.

19. In which Chinese provinces are there giant panda nature reserves?

Historically, panda were once distributed in a wide range of sub-tropical evergreen forests, covering more than half of China as well as Laos, North Myanmar, North Thailand, and North Vietnam. Because of the impacts of farming, logging and road construction, large areas of the panda's habitat has been lost and fragmented, and the panda population has shrunk back to the mountain ranges of Qinling, Minshan, Qionglai, Liangshan, and Xiangling. For a long period, and especially in the last 10 years, large scale human disturbance, large scale infrastructure construction like roads and dams, and mass tourism have severely impacted the habitat of the panda, accelerating its loss, degradation and fragmentation. In the past thirty years and fifty years, 16.5% and 55.1% of the habitat has been lost respectively. Even if humans don't further encroach on the territory of the panda, there remains only a 23,000 km² area of fragmented habitat scattered in the six mountain ranges, with the existing 1600 pandas being divided into 18 geographically

isolated populations.

20. How many years ago did the ancestors of the panda live on earth?

In the Pliocene Period three million years ago, the immediate forebears of the panda, a branch of *Ailuropoda lufengensis*, evolved into small pandas. During Pleistocene, about 1.8 million years ago, they existed as *Ailuropoda milanoaleuea daconi*. Along with the glacial period of 18 thousand years ago came the colder climates, accompanied by the Himalayan orogeny (mountain formation). This finally led to the decline of *Ailuropoda milanoaleuea daconi*. Since the last ice age 12,000 thousand years ago, this sub species has been extinct. Most mammals living with the panda in the middle Pleistocene were replaced by new species. Only the Giant panda survives until this day, and is therefore sometimes praised as being “a living fossil”.

Part 2

21. Why do pandas eat so much bamboo every day in the wild?

Although pandas live on bamboo, their digestive tract is that of a typical carnivore: the digestive tract is short - just 4.5 times the body length; they have no caecum, and do not have the complex stomach of a ruminant. Pandas can therefore only digest the content of a bamboo cell and some hemicelluloses, but can't digest well the cellulose and lignin of a bamboo cell. All of the above result in low digestion and absorption rates. Therefore, in order to meet their nutritional requirements, pandas spend a lot of time feeding every day.

22. How many species of bamboo do pandas select as food in the wild?

Pandas optimize not only the composition of their diet, but also their foraging behaviors, which vary depending on the area they are in. In the Qinling Mountains for example, *B. fargesii keng f. et Yi* is the main source of food for the panda; its shoots are thick, and pandas prefer those with stems thicker than 12mm in diameter. In other mountain ranges, pandas mostly eat *F. denudata Yi*, *Fargesia robusta Yi*, and *Y. niitakayamensis Keng f.*, etc. and prefer those with shoots thicker than 9mm in diameter. With regards to some thinner bamboos like *B. fangiiana Keng f. et Wen*, pandas prefer the old shoots from winter to the tender shoots. There are many species of bamboo - over ten species are available to pandas throughout their range.

23. How many cubs does a panda have at one birth ?

In the wild, pandas usually give birth to one or two cubs. However, in the wild usually only one of the twins will survive.

24. When do pandas become sexually mature?

Pandas in the wild become sexually mature 2-3 years later than ones in captivity. Females become sexually mature a year earlier than males in both of the environments. In the wild, females come into estrous (heat) for the first time at around the age of 6.5. Males reach sexual maturity in the wild at around 7.5 years old.

25. During which seasons do pandas mate and give birth, respectively?

Pandas come into estrous in spring. Usually, the estrous phase begins in late March, and ends in mid-May with a few exceptions in January and September. A female usually comes into estrous every two years when she gives birth to a cub, but if the cub dies, she will come into estrous again the next spring. Moreover, the estrous period is influenced by the latitude, elevation, and climate of their habitat.

26. How old is a female panda when she is first able to reproduce?

Four to eight. More detail is available in the answer to question 24.

27. How many cubs can a female panda have in her whole life?

In the wild, female pandas can give birth to five to eight cubs in their whole life; and records show that a female in captivity gave birth to fourteen cubs in total but unfortunately, none of the cubs survived.

28. How long is the gestation period of pandas?

In the wild, the gestation period is 83-184 days, (average 147 days); in captivity, the average length of gestation is 160 days.

29. Do pandas have any breeding difficulties in the wild?

According to research, pandas in the wild are well adapted to their natural environment and do not have any problems with reproduction. However, pandas in captivity have a disappointing reproductive performance.

30. Does inbreeding affect the population of wild pandas?

So far, there is no direct evidence showing the influence of inbreeding on wild panda populations. However, in some areas pandas are restricted to isolated fragments of habitat and inbreeding could lead to a decline in genetic variability in these small populations.

31. What is a newly born panda cub like?

New born panda cubs usually weigh only around 100 grams (1/900th the size of its mother, one of the smallest newborn mammals relative to its mother's size). They are pink when they are first born and look like a naked mouse, with only a thin white nap, big head and a long tail!

32. What does a new born panda cub eat?

The new born cub only sucks mother's milk. In the first seven days, the mother does not leave the cub. After seven days, the mother leaves the den to search for food, leaving the cub behind. After about four to seven weeks, the mother moves the cub to another den using her teeth (or under her armpit) – this is when the cub will see the outside world for the first time. In the following spring, the cub will follow its mother and start eating bamboo leaves; when the cub is alone, it will move up a tree where it will be safe from danger. Once the cub is eight to nine months old, the cub is almost weaned, and starts to learn from its mother how to forage in different seasons and terrains. Once a year and a half old, they become independent and do not follow their mother every day. At around 3.5 years old, the juvenile will leave its mother's home range and start looking for their own home range.

33. Does the panda cub grow fast?

The new born cubs are small, and weigh only 1/900th of the mother. But they grow fast, and can weigh 5-6kg in three months, 13kg in six months. In 1-4 years cubs can grow up to 38, 72, 87, and 97kg respectively.

34. Do female pandas abandon their cubs in the wild?

Generally speaking, if a mother gives birth to two cubs, she will feed one of them and abandon the other one. In a captive environment, some females are unable to take care of all their cubs, and abandoned cubs will be brought up by keepers. In the past, pandas have been mistaken for abandoning cubs, but research has shown once a cub is about two months old the mother will leave the cub behind in search of food, sometimes being away for more than 48 hours.

35. According to the third national survey of Giant pandas in China which took place during 1999-2002, how many pandas are there in the wild?

According to the third national survey of Giant pandas in China which took place during 1999-2002, there are about 1600 pandas in the wild, all of which are in China. The second national survey of pandas showed only 1100 pandas existed in China. The growth in numbers shown by the third survey may be due to the more accurate method used to calculate the size of the population rather than being due to an increase in wild pandas.

36. Which province is home to the biggest number of wild pandas?

According to the third national survey of Giant pandas in China during 1999-2002, there are 273 pandas in Shan'xi province, accounting for 17.1% of the total; 1206 in Sichuan province, 75.6% of the total; and 117 in Gansu province, 7.3% of the total.

37. Which mountain range is home to the biggest number of wild pandas?

According to the third national survey of Giant pandas in China during 1999-2002, there are 275, 708, 437, 115, 29, and 32 pandas in Qinling, Minshan, Qionglaihan, Liangshan, Daxiangling, and Xiaoxiangling respectively, accounting for 17.1%, 44.4%, 27.4%, 7.2%, 1.8%, and 2.0% of the total number respectively.

38. Which mountain range has the largest area of habitat for pandas?

According to the third national survey of Giant pandas in China during 1999-2002, there are 352,914ha, 960,313ha, 610,122ha, and 318,642ha areas of habitat for pandas in Qinling, Minshan, Qionglaihan, and Liangshan-Xiangling respectively, accounting for 15.3%, 41.7%, 26.5%, and 16.6% respectively. Minshan therefore has the largest available area of habitat.

39. Why has the number of wild pandas decreased?

Habitat loss, degradation and fragmentation is one of the main causes of the decline of the panda population, which is mostly caused by large scale and long-lasting human activities, such as the construction of roads, dams, and mass travel. This is especially the case during the last ten years.

In the 1980s and 1990s, illegal poaching was the main reason for the decline in panda numbers, especially from accidental shooting of pandas when poaching other animals. Fortunately, with the enactment of the *Law of the People's Republic of China on the Protection of Wildlife* and the enhancement of public awareness on wildlife conservation, illegal poaching has almost been eliminated. Some panda deaths do continue to occur, however, when they become trapped in illegal snares meant for other species.

40. What is the biggest threat to pandas in the wild?

In the past thirty years, 16.5% of habitat has been lost; in the past fifty years, 55.1% of habitat has been lost. In the next fifty years, even if we don't further encroach on panda territory there is only an area of 23,000 km² area of fragmented habitats scattered in the six mountain ranges, and the existing 1600 pandas are divided into 18 geographically isolated populations. Habitat loss, degradation and fragmentation are the main threats to panda populations; therefore, conserving the habitat is the most important step for panda conservation.

Part 3

41. At what age can female pandas reproduce?

According to observations in the wild and age identification of dead individuals, a female is able to breed until 13, males until at least 16 years old.

42. How long does the pandas' oestrous period last?

The oestrus period of a panda usually lasts for 12-25 days, and they are most fertile for only 2-5 days every year (3 days on average). Mating periods can vary from seconds to 2 hours.

43. Will a poacher be prosecuted if he or she poaches a panda?

Under the Penal Code, the law stipulates that anyone who conducts illegal hunting or killing of state-protected valuable and endangered wildlife, or the illegal acquisition, transport or sale of state-protected valuable and endangered wild animals or their products, will be sentenced to five years of fixed-term imprisonment or criminal detention, as well as being fined; in the case of serious violation, at least five to ten years of fixed-term imprisonment and a fine; in the case of a particularly serious violation, more than a decade in prison, plus a fine or confiscation of property.

Anyone who violates hunting regulations, carries out hunting in a suspended hunting area, or uses banned hunting tools and methods, can be sentenced to three years imprisonment, criminal detention or control, or a fine.

Pandas are under the first-grade State protection of animals; hunting pandas therefore violates the the Penal Code, and violators are punished.

44. In the panda's wild habitat, how often does a large area of bamboo blooming happen?

Bamboo blooming refers to the sexual multiplication behavior of bamboo every 30-120 years. One or several species of bamboo blooms in large areas and wilts, following a long period of seed restoration that lasts for many years. It takes nearly ten years for the bamboo population to restore. In this period, pandas must find other bamboos to feed on. For this reason, bamboo blooming in large areas is a potential threat to panda survival.

45. Is a large area of bamboo blooming in the panda's wild habitat a severe threat to them?

Pandas live on bamboo, so bamboo's life cycling brings some problems to panda. Bamboo blooming in large areas increases the difficulties of foraging; for example, in the middle of 1980s, it lead to the death of many pandas. But in their natural habitat, there are usually more than two species of bamboos; when a species of bamboos blooms, pandas can feed on another species of bamboo, or enlarge its territory to search for food. However, panda habitat is fragmented by human disturbance, and movement between habitats for pandas is difficult; for this reason, bamboo blooming in large areas is a potential threat to panda populations.

46. Will pandas become extinct in the wild soon?

Panda populations in the wild will not become extinct in the near future. Recent research shows that, the genetic variability of the panda is still very high; as long as the habitat is protected effectively and enlarged appropriately, the population of wild pandas should increase.

47. Are pandas at their evolutionary “dead end”?

Some people think that pandas have problems because of their genes and/or reproduction and that it is at an evolutionary “dead end”, because they see the reproduction problems of pandas in captivity. But recently, researchers have found that pandas are not at an evolutionary “dead end”, and it still has high genetic variability. They are threatened not because of their genetic make-up, but because of the forest destruction and habitat fragmentation.

48. Can cloning techniques help save wild pandas?

Conservation aims to maintain populations of wildlife in their natural habitat. Cloning techniques cannot ensure genetic variability of wild populations, and thereby their long lasting existence; the most effective and direct way to protect pandas is to conserve the wild population in their natural habitat.

49. What is the most urgent work needed to protect pandas in China?

In China, the government and other organizations have so far established 67 nature reserves for pandas; but these nature reserves only cover 71% of habitat (a large part of which is not protected effectively) and 57% of the panda population, . Moreover, the existing nature reserve network is not perfect. Therefore, to expand and improve nature reserve networks for pandas and their management, modify and complete relevant policy/law, and ensure and promote conservation on wild population of panda is the most urgent work for conserving pandas in China.

50. How many panda nature reserves do we have in China so far?

To date there are 67 panda nature reserves in China, 40 of which are in Sichuan, 20 in Shan’xi, and 7 in Gansu. These nature reserves cover 71% of the panda habitat and 57% of the panda population.

51. How much area does the protected range of pandas cover?

The protected range of pandas refers to the panda nature reserves, corridors and some forest farms – areas which were used for logging prior to the ban. There are 537,100ha of protected panda range in Qinling, 2,030,000ha in Minshan, 527,900ha in Qionglaihan, and 668,000ha in Liangshan-Xiangling. The total area is 3,763,000ha.

52. Which is the biggest panda nature reserve?

The largest panda nature reserve is Gonggashan Nature Reserve in Sichuan province, with an area of 406,900ha; the second largest is Baishuijiang Nature Reserve in Gansu province, with an area of 223,800ha; the third largest is Wolong Nature Reserve in Sichuan province, with an area of 200,000ha.

53. Do all wild pandas live in nature reserves?

At present, there are 67 panda nature reserves in China, covering 71% of panda habitat and 57%

of the panda population; there are large parts of habitat and some panda populations outside of panda nature reserves.

54. Which is the earliest founded panda nature reserve?

In the 1960s, China enacted the *Directions on Conservation and Appropriate Utilization of Wild Animal Resources*, establishing four nature reserves in 1963 aimed at panda conservation. The four nature reserves are Wolong Nature Reserve, Baihe Nature Reserve, Wanglang Nature Reserve, and Labahe Nature Reserve.

55. Which year was the Giant panda scientifically named?

In China, people had known of the existence of pandas in the Xi Zhou Dynasty, 3000 years ago. The famous geographical works *The Classic of Mountains and Rivers* written 2700 years ago told about the distribution of pandas: "It looks like a bear but coloured with white and black...and distributed in south of Yandao county, in the Qionglai Mountain." As there was no systematic taxonomy in ancient times, pandas had a series of local names, such as Pi, Pixiu, Mo etc. "Panda", as a modern name of this special species, was not recorded until the 1930s, when China exhibited it for the first time in a zoo in Chongqing, with the display sign saying "Panda" in both Chinese and English.

The panda was introduced to the western world by the French missionary and naturalist Pere Armand David in 1869 after he obtained several panda furs. This proved the existence of the panda and it was therefore given a scientific name in 1870.

56. Do hungry pandas search for food in nearby human settlements?

Sometimes, hungry pandas go into nearby villages for food, but usually they avoid people. Scientists think that the wandering pandas are young individuals who have not set up their own territories after leaving their mothers. When bamboo bloomed in the 1980s, in panda habitat, there are several reports of hungry pandas going to nearby villages for food.

57. Do pandas attack human?

Pandas are very timid, and usually run away when they come face to face with people. However, individuals in captivity have been known to attack people.

58. Is it easy to see a panda in the wild?

Pandas live a solitary life in remote mountain areas, and they are sometimes called a 'forest hermit' - it's therefore not easy to see a panda in the wild. However, in panda habitat, it is easy to see signs that pandas live there, like faeces and bitten/chewed bamboo.

59. Approximately how many captive pandas are there?

At the end of 2007, there were 240 pandas in captivity in China and several other countries.

60. Which of the following countries have kept pandas in captivity?

At present, many zoos in many countries and districts have the experience of keeping pandas in captivity, such as China, America, French, Germany, Mexico, Japan, North Korea, Hongkong and

Australia.

Part 4

61. What is the final goal of keeping pandas in captivity?

The goal of breeding giant pandas in captivity is to reintroduce them into the wild so that the population of pandas in the wild can be increased. Scientists have tried to make great efforts on this, but so far, they haven't made any breakthroughs, failing at several attempts of reintroduction.

62-63. Where is the biggest panda captive breeding centre in the world? How many pandas did the biggest panda captive breeding centre keep before the May "5.12" 2008 earthquake?

The largest giant panda captive breeding and research base is The Giant Panda Breeding Center located in the Wolong Nature Reserve in Sichuan province. Before the "5.12" earthquake, there were 68 pandas.

After the earthquake, most of the giant pandas were transferred to safe places, while their shelters were being repaired.

64. Which year was the first captive breeding panda cub born?

The first artificially inseminated giant panda cub was born in Beijing zoo in 1963. By the end of 2008, there were 191 artificially inseminated giant pandas alive, among which 188 belong to China.

65. Is there any case when a captive panda was reintroduced to the wild?

It is reported that there have been four attempts to reintroduce pandas from captivity into the wild but all have failed.

66. What is the model for Jing Jing, one of the mascots of The 29th Beijing Olympic Games?

Jingjing, one of the five mascots of the 29th Beijing Olympic Games in 2008, comes from the giant panda, the national treasure of China.

67. Which group were members of 8 Olympic Pandas that came to Beijing for the Olympic Games?

The names of the 8 giant pandas are Cuicui, Duoduo, Meixin, Fengyi, Taotao, Langlang, Huanhuan, Fuwa. They are all from Wolong, Sichuan province and were specially selected for the Olympic Games, and known as "Dream Team of Eight". During the period of the 2008 Beijing Olympic games, they encouraged more people to protect wildlife and were inspirational for the Olympics.

68. How were the 8 members of the Olympic Pandas chosen?

The selection criteria for the 8 giant pandas for the Olympic Games were that they must be young, healthy and strong. Four were female and four males.

69-73. How did the 8 members of the Olympic Pandas get to Beijing? When did the Olympic

Pandas arrive in Beijing? Where did the Olympic Pandas live in Beijing? Will the Olympic Pandas be sent back to their home in Wolong Nature Reserve? What was the main purpose of the Olympic Pandas coming to Beijing?

The 8 giant pandas at the Beijing Olympic games were transported by a special airplane on May 24, 2008. The conditions in their compartments were basically the same as that in Wolong: the temperature was between 8-20°C, there was fresh bamboo and experienced vets. They were taken care of in the special building for giant pandas in Beijing Zoo. During their stay in Beijing, there were a series of exhibitions related to public education to enhance public awareness, and create a good feeling for panda conservation. They were taken home in September 2008.

74-76. What's the name of the first foreign-born panda cub? Which zoo was the first foreign-born panda cub born in? Who was awarded the title of "Hero mother"?

The first foreign-born panda cub was "Huamei", born on August 21st, 1999 in Santiago zoo in America. Its parents "Baiyun" and "Gaogao", were sent to America for the "Cooperating Research of China and America on Panda" program. "Huamei" came back to Wolong Nature Reserve when she was four years old; after that, she gave birth to three pairs of twins in succession, which earned her the name "Hero Mother".

77. In which areas of panda habitat did the May 2008 ("5.12") earthquake happen?

The "5.12" earthquake happened in the area of Wenchuan, Qingchuan Nature Reserve in Qionglai and Minshan Mountain range, with the direction of southwest to northeast, more than 700km long in the north-south direction, and 200km wide in the west-east direction. About 80% of panda habitat has been affected to different degrees.

78. How many nature reserves did the "5.12" earthquake affect?

40 out of 67 nature reserves were affected by the "5.12" earthquake, encompassing 80% of the pandas' whole range. The main effects on the wild panda population and its conservation are additional habitat fragmentation, infrastructure destruction of nature reserve administration and protection stations, buildings collapsing, damage of equipment relevant to wild panda patrolling and monitoring, and patrolling routes blocked by landslides and mud-rock flows.

79. What impact did the "5.12" earthquake have on captive pandas?

The main effect of "5.12" earthquake on captive pandas was the destruction of infrastructure. In the Artificial Breeding Center of Wolong Nature Reserve, more than 80% of shelters collapsed -all but one panda were translocated to safety. Moreover, the transport road was hampered by the landslide and mud-rock flow, leading to a shortage of food resources for the captive pandas, but the staff were able to ensure the supply of sufficient food.

80. What urgent work is needed for wild panda conservation since the "5.12" earthquake?

After the "5.12" earthquake, urgent work for wild panda conservation was, and continues to be needed to restore the infrastructure and monitoring systems in panda nature reserves. Further measures will be taken on the basis of systematical patrolling and monitoring.

Part 5

81. What was the name of the earliest book about Giant pandas?

The earliest book on pandas is the *Giant Panda in Wolong* written by some experts and published in 1985, based on WWF's research in Wolong Nature Reserve since 1980. This book aroused more attention and profound understanding in China and abroad on Giant Pandas. After that, and more intensive research on wild pandas, with support from WWF, professor Pan Wenshi and other experts published *The Natural Shelter of Giant Panda in Qinling* and *Chance for survival* in 1988 and 2001 respectively, and Lv Zhi and George B. Schaller published *Giant Pandas in the Wild—Saving an Endangered Species* in 2002. Later in 2006, *Principles and Practice on Ex Situ Conservation of Giant Panda* by Zhang Zhihe and Wei Fuwen, and *Giant Panda— Natural Heritage of Human Beings* by Zhao Xuemin were published, and systematically introduced principles and practices for the conservation of wild pandas and the importance of pandas on origin, evolution, biology, ecology and social interaction.

82. Which web-sites refer to panda conservation?

<http://www.panda.org>

<http://www.pandaabc.com>

<http://www.wwfchina.org>

<http://news.sohu.com/panda>

<http://www.wildpanda.org>

83. What is the biggest challenge for panda conservation recently?

Although we have made some progresses in protecting pandas, there are continuing threats leading to habitat loss, degradation and fragmentation. According to previous research and data, traditional threats like logging, poaching, grazing and farming are significantly reduced, albeit not eliminated completely, but new threats come one after another, such as large scale road and railway construction, mining, tourism, dams etc.

In the next 30 years, the main challenges we are facing are:

How to decrease and/or eliminate the impact of large scale human activities from the root causes, to prevent habitat loss, degradation and fragmentation of wild panda habitat, and to increase and maintain the number of wild populations at a relatively viable level;

How to connect the isolated populations together, promote the genetic communication of wild pandas, maintain a high genetic variability and enhance the viability of the population;

How to conserve as a whole the landscape scale ecosystem functions such as forest, grassland, wetland and lake, and the relevant wildlife;

How to promote a sustainable socio-economic development system in local communities, foster an ecological compensation and restoration mechanism, reduce humans unsustainable dependence on nature and achieve harmonious coexistence between people and nature.

84. What is currently the best opportunity for panda conservation?

With the efforts of both government and WWF, the habitat of pandas has increased rapidly compared with the 1990s. 67 panda nature reserves have been established, and 57% of the wild population and 71% of the habitat has been protected effectively.

There has been initial success with the construction of some eco-corridors for panda conservation, and some isolated small populations have been partially connected. Monitoring research shows that pandas have taken advantage of the corridors to migrate and expand their home range.

A nation-wide standard patrolling and monitoring system for the wild population has been established and the data collecting, analyzing and managing systems will be standardized gradually.

With the breakthrough in being able to provide energy sources that require less wood, or which work from biogas, and with livelihoods being pioneered that don't depend on forest resources,, sustainable development systems are being modeled in local communities and are being increasingly adopted; large scale human disturbance has thereby been controlled effectively; and human-wildlife conflicts have been reduced.

National and local policies are being completed gradually, and public awareness on conservation is increasing, so that wildlife conservation has a powerful policy guarantee and wide public support.

85-86. Which was the first NGO to conduct panda conservation in China, and when?

In 1961, a panda named "Xixi" was displayed at London zoo, and lots of people visited to see this unusual species. From that event, WWF recognized that an influential logo can overcome all language barriers, so they employed the panda as its logo. From then on, the panda became a symbol for the global campaign for nature conservation.

In 1980, WWF came to China as the first invited international NGO to conduct conservation and research work on pandas. With the support of WWF, experts carried out conservation and research work in Wolong, in Sichuan province, and wrote the book *Giant Panda in Wolong*. This book on pandas, aroused attention and increased understanding in China and abroad on Giant Pandas.

After that, WWF carried out conservation work on pandas in the following thirty years, including establishment and enlargement of nature reserves, construction of nature reserve networks and management, monitoring systems for wild populations and panda habitat, and alternative livelihoods for local communities around nature reserves, etc. These projects immensely promoted the enlargement of panda nature reserves, making panda populations more stable and making the future for pandas more hopeful.

87. What are the main achievements of WWF on conserving pandas?

In nearly thirty years' of panda conservation, WWF has made a series of significant achievements,

including:

In the early 1980s, WWF pioneered and cooperated with others on the conservation of pandas, systematically conducted the ecological research work on pandas for the first time, uncovered the mystery of pandas for the first time and funded for the establishment of the Panda Conservation and Research Center in China.

Cooperating with the National Forestry Bureau, WWF conducted two surveys on population and living status of pandas in 1985-1988 and 1999-2003 respectively, which provided complete information for panda conservation as well as planning and establishing nature reserves. On the basis of this, WWF and the National Forestry Bureau together made a conservation plan.

Cooperating with the national and provincial Forestry Bureaux, WWF promoted the establishment of the nature reserve system. In the process of this, WWF provided financial and technical support, that promoted the formulation of the national panda nature reserve network.

Cooperating with the provincial Forestry Bureaux, WWF promoted the establishment and restoration of eco-corridors such as Huangtuling, Tudiling, Qinling national highway No. 108, etc. And this promoted integration of isolated populations and enhanced the viability of the wild panda population.

WWF constructed wild population and habitat management networks in Minshan and Qinling, as well as setting up monitoring systems, to monitor changes in panda populations and its natural habitat. Also, WWF is promoting the standardization of this network with the cooperation of the National Forestry Bureau.

WWF conducted a series of programs on alternative livelihoods and energy resources in Minshan and Qinling, as well as public education, to promote the sustainable development of local communities and a harmonious coexistence between people and nature.

88-91. In its conservation strategy WWF lists the panda as what? How many global priority areas (including the upper reaches of the Yangtze River, habitat of panda) are listed and protected by WWF? How much money did WWF spend annually on the upper reaches of the Yangtze River, the habitat of the panda, on average in the past ten years?

In its global conservational strategy, WWF list pandas as one of thirteen priority flagship species or species group, consisting of Asian Elephant, African Elephant, Gorilla, African Rhino, Asian Big Cats, Asian Rhino, Giant Panda, Marine Cetaceans, Sea Turtles, Orang-utan, Polar Bear, River Dolphin, and threatened Kangaroos. The upper reaches of the Yangtze River where pandas live is included as one of thirty five priority areas listed by WWF, and has invested ten million RMB on average per year for the past ten years to protect pandas and their habitat.

92-93. What is the purpose of WWF's award of "Gift to the Earth"? Which provinces in China have been awarded the "Gift to the Earth" because of their excellent contribution to conserving pandas?

“Gift to the Earth” was initiated by WWF in 1996, and attended by governments, companies and individuals. It aims to introduce to the public the leading forces and significant achievements in global nature conservation. This award is one of the highest honors for nature conservation contributions for governments, companies and individuals. Since 1996, WWF has awarded 126 “Gifts to the Earth” in fifty countries in the world, including three in China.

In April 2003, the Shaanxi government was given the award of “Qinling—Gift to the Earth”, for their contribution to the construction of habitat conservation networks in the Qinling Mountain Range. By the end of 2007, twenty nature reserves and five eco-corridors had been established in Qinling; the protected areas covering up to 526,645ha, the network of 514 patrolling and monitoring routes covers the whole habitat in the mountain range.

In October 2006, Sichuan and Gansu were given the award of “Minshan—Gift to the Earth” for their contribution to panda conservation in the Minshan Mountain Range. By the end of 2007, forty four nature reserves and four forest farms had been established in Minshan; the protected areas cover up to 3,225,900ha, and the network of 139 fixed patrolling routes and 56 variable patrolling routes covers the whole panda habitat in the mountain range.

94. What is the most precious experience of WWF in conserving pandas?

In conserving pandas, it is important that WWF focuses on the following three aspects: firstly, the enlargement of nature reserves and construction of the nature reserve network; secondly, construction of patrolling and monitoring systems and management capacity to support these measures; thirdly, the construction of alternative livelihood and energy resources in local communities. All of them are indispensable.

95. How much money will WWF spend during the 3 years of the strategic project “The Green Heart of China” initiated in 2007 for panda conservation?

Faced with these challenges and opportunities, WWF has initiated “The Green Heart of China---Integrated Landscape Conservation and Sustainable Development in Giant Panda Ranges in the Upper Reaches of the Yangtze River”. This project will finance 55 million RMB in the upper reaches of Yangtze River, aiming at an integration of existing habitat and potential habitat of pandas, conserving as a whole ,the landscape scale function of the ecosystem such as forest, grassland, wetland and lake, and the relevant wildlife. This integrated area is just like a green heart; constructing the green heart, we believe that pandas will have a living future.

96. What are the objectives of the panda conservation strategy of WWF?

The objectives of the panda conservation strategy of WWF are:

By 2030, those threats that cause the loss, destruction, degradation and fragmentation of Giant panda habitat will be comprehensively managed and the large scale human activities affecting the survival and reproduction of Giant panda will be effectively decreased or eliminated.

By 2030, the existing panda nature reserves will be completed; potential habitat will be included; necessary eco-corridors will be constructed; the mountain ranges of Qinling, Minshan, Qionglai and Liangshan-Xiangling will be integrated as a whole network to protect at the landscape level; and the population of pandas will increase to a sustainable and viable level and a free

communication of small populations will be achieved.

By 2030, pioneering alternative energy and livelihood sources, a sustainable socio-economic development system will be fully established in local communities; an ecological compensation and restoration mechanism will be fostered, and consultation and education will be promoted to significantly benefit the public.

By 2030, at the landscape scale, conserving as a whole the functional ecosystem such as forest, grassland, wetland and lake, and the relevant wildlife; people will live harmony with nature.

[97. What is WWF's vision for panda conservation?](#)

By 2030, a viable Giant panda population living in the well-managed forests on the upper reaches of the Yangtze River, which in turn will provide ecological services to the people living in its vicinity and further downstream

[98. After the "5.12" earthquake, how is WWF helping to re-establish the environment needed for panda conservation?](#)

In the "5.12" earthquake, WWF initiated an emergency plan via its global network, financed by more than three million yuan, providing nature reserves and local communities with 0.6 million yuan worth of emergency supplies, such as tents, rice, candles, satellite phones, printers, and fax machines, etc. At the same time, following the "Green Reconstruction Plan", WWF will increase the financing to panda conservation, and help to restore the infrastructure and monitoring systems of nature reserves.

[99. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature by:](#)

Conserving the world's biological diversity

Ensuring that the use of renewable natural resources is sustainable

Promoting the reduction of pollution and wasteful consumption

[100. For the purpose of panda conservation, WWF encourages you to:](#)

Reduce wasteful consumption, join in our environmental conservation activities, pay attention to and work to conserve the environment and wildlife.