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# Earthquake Reconstruction Newsletter

## Special Anniversary Issue



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Mountain Villagers



© Wolong NR

The wild pandas captured by infrared cameras at Wolong national Nature Reserve.



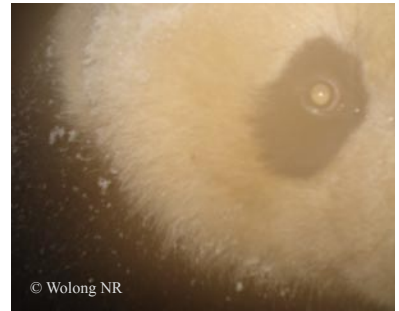
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## Patrolling Notes after the Earthquake

Zhang Qingyu, Ranger at Wolong Nature Reserve



Zhang Qingyu

Infrared cameras were set up in the Wolong nature reserve to monitor giant pandas and accompanying animals living in the area. The first batch of cameras was installed last September, followed by another batch in mid-November. The patrolling team found that though the habitats had been damaged, the giant pandas were still living a happy life with their neighbors.

Being the epicenter of the May 12 earthquake, the spectacular scenery of the Wolong Nature Reserve was destroyed. Large areas of mountain collapsed and landslides stripped away much of the vegetation. The magnificent natural beauty was gone, leaving only devastation. The monitoring team felt severely the loss not only of this precious ecological environment, but also of their decades of hard work in protection and scientific research.

It was a difficult and dangerous job to lay infrared cameras during November's freezing conditions. The earthquake had destroyed all the patrolling paths at different levels. Often we had to take different paths, and even those familiar with the routes would occasionally get lost. Though it was seven months since the earthquake, the aftershocks never stopped. The monitoring team would have to proceed cautiously while staring at falling rocks and the collapsing mountain massif. After conducting their safety checks they would run like rabbits, praying: "Please god, let there be no aftershocks!"

Carrying heavy field equipment, the monitoring team traveled against a biting wind across the frozen, zigzagging and slippery mountain road. Besides the sound of the heavy snow, we could only hear our panting breath. No one could tell if the drops of cold water rolling down their cheeks to their necks were made of sweat or snow. We just wiped the drops off, pulled tight our wringing clothes, glanced at the misty hilltops, and continued dragging our numbed feet forwards. When we finally reached the first installation site there was no opportunity for rest. Instead, we had to choose the camera orientation, clear the barriers and test the equipment.

It was nearly dark by the time the nine cameras were installed, and the entire team was tired and hungry. We sat down in a relatively dry and open place, took out some ship's bread with our pale, numbed fingers, and washed down their food with what

had become iced tea. Though the ship's bread was barely edible, we still enjoyed it as if it was a delicacy. We sat around the fire to dry our drenched clothes and shoes, drank some alcohol together and exchanged jokes. We could almost manage to ignore the sub-zero temperature of -8°C by focusing our thoughts on the future of the Wolong Nature Reserve and the warmth of our families.

So far, we had installed 97 infrared trigger cameras in the nature reserve, at Sanjiang, Xihe, Zhonghe, Laoyashan of Wolong, Tizigou and Weijiagou. We also supplemented the data for 30 sample monitoring routes. We collected the cameras, and were significantly surprised to find that nine cameras from Sancun to Laoyashan had captured images of 14 species from 78 photos, which included 23 giant pandas. Two cameras even caught the entire process of the giant pandas' attack on the cameras themselves, showing the animals' lively, playful and curious nature. These findings were enormously satisfying for the entire monitoring team.

The monitoring team is currently analyzing the data collected in the field through the GIS system platform. By monitoring the giant pandas and their accompanying animal populations in the four seasons after the earthquake, we are trying to determine if there are any significant changes to the giant pandas lives. The results will provide a more rigorous scientific basis for the protection of giant pandas and the recovery of their habitats after the earthquake.



# Scientific Recovery of Damaged Giant Panda Habitat No to Commercial Forestation, Yes to Native Planting

Ran Jianghong, School of Life Science, Sichuan University



Ran Jianghong

The earthquake in Wenchuan, Sichuan Province on May 12th, 2008 brought not only human casualties and property loss, but also severe damage to biodiversity.

The earthquake-affected area is among the world's top 25 areas in terms of biodiversity, and is classified as one of WWF's 200 key ecological regions. There are four UNESCO World Heritage sites within the area: the Qionglai Mountain Giant Panda Habitat, Jiuzhaigou, Huanglong, and Dujiangyan-Qingchengshan. It is also the main habitat for some rare species like the giant panda and the golden monkey. The earthquake damaged large areas of giant panda habitat, which severely impacted panda livelihoods and reproduction.

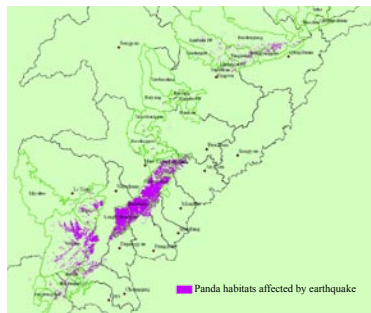
Giant pandas have been living in the area for several million years. From an evolutionary perspective, they should have built up some endurance to natural disasters so that an earthquake would not lead to large-scale population decline. However, rapid growth in the human population means that much of the giant pandas' habitats have been taken over by people, leaving only the mountains and valleys free for the pandas to call home. Some habitats were destroyed so badly by the earthquake that the giant pandas there are facing unprecedented threats to their livelihoods. At the Longxi-Hongkou National Natural Reserve and Baihuihe National Natural Reserve, the giant pandas' habitats were reduced to less than 60% of their original area. The geological disaster damaged large areas of bamboo grove, taking away the giant pandas' main source of food, while landslides buried some mountain streams, depriving the pandas of their drinking water. Landslides also became a barrier to the giant pandas' daily movement and seasonal migration.

If there were other potential habitats in the earthquake affected areas,

the giant pandas could potentially rebuild their lives. However, there are no new areas for them to explore. Further human interference to their existing damaged habitats will make their chances for survival even more difficult, and place the growth of the population under jeopardy.

This lack of living space for giant pandas makes the recovery of their habitat a priority for current protection work. We need to conduct detailed, scientific investigations of the changes in their food resources and the barriers to their migration, and then work out a plan for habitat recovery. For the landslide masses with gravel as the stroma, we should let them recover on their own. For those with soil stroma, we should initiate recovery measures that will meet giant pandas' habitat needs, such as planting native tree species and bamboo to quickly meet their food requirements. For the huge landslide masses that are barriers to giant panda migration, we should discuss the possibility of artificial measures such as building simple pavements for pandas and other rare species. With the right soil conditions, we should take some measures to recover potential giant panda habitats. Local governments and nature reserves should not introduce outside species or commercial forestation when planning for the recovery of giant panda habitats. If the habitats were turned into planted forest or production forest, the giant pandas would lose more habitats. It would also result in more human impact on the habitats, which poses greater threats to giant panda survival. Currently, it is not possible to carry out thorough field investigations of the giant panda habitats, or the vegetation recovery in these areas. It is important to establish some principles or guidelines on data collection and scientific vegetation recovery for use by local governments and nature reserves. These guidelines would help ensure that the needs of giant pandas are taken into consideration, and that the development of neighboring communities is balanced with giant panda protection.

Governments and people around the world have shown their care and support for the endangered giant panda. I believe the pandas will pull through, and their homes can be rebuilt soon.



2.5% of the total panda habitat has been destroyed by the earthquake, while the number exceed 35% in south Minshan Mountain.



### Jiang Zeyin, WWF Programme Officer:

It will take considerable time to recover the habitats destroyed by the earthquake. To a certain extent, planting will be helpful for habitat recovery. China's forestry department has been carrying out forest planting and revegetation work since the 1950s. Single species forests have been planted across some large areas. These forests appear to be growing well and they are viewed as a successful model for revegetation in China. However, these forests are actually "Green Deserts" that have lost their natural eco-function and biodiversity. What we do for the recovery of giant panda habitats should take into account not only the habitats' recovery, but also the protection of biodiversity. It is only by following such guidelines that we can reach the goal of ecosystem recovery at the giant panda habitats.



© Wang ying/WWF China

Chinese gooseberry and Houpu Magnolia are the main income source of Lianhe villagers.



© Chen Can/WWF China

The drinking water system is built with support from WWF and labor from Lianhe village.

## Water Returns to the Village

Narrator: Zou Huaguang, Head of Lianhe Village, Hongkou Township, Dujiangyan  
Reporter: Zhang Ou, Correspondent at the Chengdu Evening newspaper



Zou Huaguang

**1.** I'm not exaggerating. Our Lianhe Village used to be heaven before the earthquake hit.

Our village is 40 kilometers away from Dujiangyan City. Surrounded by green hills on three sides, it was well equipped with basic infrastructure. Though we didn't follow the lead of other villages in Hongkou, who invested a lot into tourism to generate wealth, the 200 villagers were able to enjoy their lives thanks to harvests of medicinal herbs and Chinese gooseberry. No one knew that the water supply would be a problem in Hongkou. Everyone in Chengdu had heard about the boats drifting in Hongkou! The drinking water here comes from a tap spring. I ran a home-stay at the entrance to the village. Some city people who came to visit brought along bottled water. I asked them to try the sweet spring water at our village, and once they did, they emptied their bottled water to take some of our spring water home.



© Zhang Ming/WWF China

The earthquake on May 12th, 2008 damaged all the buildings in the village. The landslide turned our village into an isolated island in the mountains. A rescue aircraft took us to the Hongkou Village in Hongkou Township. We were settled temporarily, first in tents and later in prefabricated houses. However, all the workers wanted to return to the village, as the Houpu Magnolia – a medicinal herb - and the Chinese gooseberry were waiting for pollination, without which there would be no harvest!

Lianhe Village is 10 kilometers away from Hongkou Village. Only three kilometers of the road have been rebuilt, so a one-way trip can take up to two or three hours. If the villagers want to work on their farmland, they have to build a shed to share for one or two days. Even if they could manage such a way of life, the water problem still remains. All the pipelines were broken and the river coming out of the village was not clean water but mud. It was said that sulfur water was found in some other earthquake-affected areas. Could it be poisonous? We didn't see sulfur water going out, but some villagers used to see water columns as high as two meters on their farmland, which could be groundwater extruding through the cracks. Nobody dared to drink the water, no matter how thirsty they were.

I don't remember the date when some youngsters took the big risk of climbing up the cliff. They found a relatively clean raceway five kilometers away. It took them three or four hours to fetch water with wooden barrels. For one family, 30 liters of water would only last for one day. Besides drinking water, the rest would only be enough for personal hygiene if the whole family used the water together. But as the income of the village came from the Houpu Magnolia and Chinese gooseberry, the villagers were more worried about irrigation water. We would sigh in despair if it was sunny for a few days. Chinese gooseberry is planted in sandy soil, which does not hold water well, so the lack of water caused the fruit to dry up.

Fitting with the mountain shape, the water pipeline could provide convenient irrigation.

**2.** Our village is next to the Longxi-Hongkou National Nature Reserve. As the community with the closest relationship to the nature reserve bureau, we are glad to support the conservation work. The nature reserve also assists with our development. After the earthquake, nature reserve staff and WWF came to carry out impact assessments, which helped us to address recovery issues.

Wang Bin, a section chief of the nature reserve, introduced me to Shao Wen and Chen Can from WWF last September. Wang Bin told me that I could raise any problems that needed to be addressed, and the nature reserve and WWF would work with us to try and solve them. In my mind were the issues of roads, electricity and water. The traffic office and power company could solve the first two issues, so water was the priority we needed their help with.

I told them that our village was short of water supply, which would be a serious threat to the villagers' subsistence. Without water to irrigate their medicinal herbs and Chinese gooseberry, the villagers would have to return to collecting wood and herbs in the mountains, placing more pressure on the nature reserve. They agreed to help us to solve the water problem. WWF funded water pipes and tanks and we put in the labor, looking for water sources and calculating the necessary budgets. We also signed an agreement with WWF, who had donated 170,000RMB. Many villagers burst into tears when hearing the news of these water projects. Work to divert water from the mountain source to the village started on Feb 27th, 2009, with 70 male laborers involved. There are only 200 laborers in our village, and they still had to work on the reconstruction of our housing.

We found our water source at Dashuigou, at an elevation of 1,900 meters. The biggest difficulty was the two collapsed mountain massifs between Lianhe Viallege and Dashuigou. Though it has been some time since the earthquake, no one could walk there. We had no other choice but to make a detour, adding 2,000 meters of water pipes. Besides the water pipes, we built four water tanks that had to fit with the mountain shape and provide convenient irrigation. The project was finished on March 25th., 2009. All the villagers got together in front of the closest water tank to celebrate like they would at a festival. Chen Anze, a resident aged in his 60s, said: "I have not had enough water to clean my face for nearly one year. Today I could take a bath! My Chinese gooseberry will have a good harvest!"

We invited the nature reserve bureau and WWF to witness the first moment of water pouring. It was a shame that due to road restrictions, they were not able to come. They would be in the same high spirits as us if they had been there. Now with the recovered water supply we can start rebuilding our houses!

### Chen Can, WWF Programme officer:

Longxi-Hongkou Nature Reserve is located near the city of Chengdu, so the environment here is more easily affected by humans. WWF cares about the sustainable utilization and development of the natural resources in the area. The earthquake significantly impacted giant panda habitats and their neighboring communities. The diversion works help the community to recover their subsistence and their lifestyle. Therefore, the exploitation and consumption of the natural resources will be reduced, producing harmony between humans and nature.



# He Youxin, Selling Pepper to Carrefour

Edited by Zeng Ming



He Youxin

Maoxian County residents might not know of He Youxin as the president of the Red June Pepper Association, but most of them do know of him as “the man who sells pepper to Carrefour”. After the earthquake on May 12th, 2008, He Youxin and his association secured a sizeable 3 million RMB deal to sell 34 tons of pepper to Carrefour .

Maoxian Qiang Autonomous County lies in the remote mountains of Minshan, next to the Baodinggou Giant Pandas Nature Reserve. By national standards, this county is classified as poor, with average local income per person at less than 2,000 RMB a year. Dahongpao pepper, a local product of Maoxian County, is well known in Sichuan Province because it is larger than normal peppers and full of flavor. It is also the main income source for villagers living around the giant panda habitats.

The sale of pepper had long been monopolized by 300 two-way merchants, who drove down prices and tampered with the product, which had destroyed the reputation of the Maoxian brand of pepper. At Goukou Township, He Youxin's hometown, farmers could do nothing but wait for these merchants to procure their goods at low prices, due to their small quantity of production and remote location.

In a bid to improve the situation, the Goukou Township set up the Pepper Association in 2005 to help farmers sell their peppers. He Youxin, who had been running his business in the county center, was invited home to act as association president. He used up his funds of more than 100,000 RMB in the first two years supporting the attendance of association members in various food fairs. Despite this investment, the volume of sales never exceeded 10 tons.

Things proceeded in much the same way until 2007 when WWF introduced Carrefour into the picture.

Over the course of its long-term giant panda protection, WWF realized that the impact that neighboring communities had on the pandas and their habitats could only be relieved if panda protection and development went hand in hand. WWF suggested Carrefour use its well-established market channels to help sell these communities' alternative livelihood products. With coordination from WWF, and after a thorough product examination, Carrefour brought Xiqiang Red June pepper into its stock, buying 15 tons of pepper from the association in 2007. He Youxin and the association members had finally found a stable marketing channel.

When the earthquake hit on May 12th, 2008, He Youxin was printing documents in an Internet cafe at the county center. Realizing the earth was shaking, he dragged his friend out of the Internet cafe to find his truck had been hit by



The pepper association returned the profit to pepper farmers.

a collapsed wall. All the buildings had been destroyed as far as the eye could see. Maoxian County, located just 10 kilometers from the earthquake epicenter, lost access to water, electricity, communications and roads. It became an isolated island, cut off from the outside world.

The earthquake halted He Youxin's plans for pepper sales, including a scheduled promotional meeting with Carrefour in Shanghai two days later. On May 15th, He Youxin left the county for Goukou Township. Despite the short distance, it took him more than a day to reach his hometown. In the second half of May, his home served as the pepper association's reception center, providing passersby with water and porridge. The first arrivals at the center were tourists from Jiuzhaigou who came on foot. Then came an endless stream of people that included mountain villagers, the army, volunteers and rescuers. “They were just like refugees,” said He Youxin. “I had to do something”.

Meantime, WWF had sent 100,000 RMB worth of emergency relief goods to Maoxian County through Huanglong, including tents, medicines, radios and torches. He Youxin and the pepper association members made the potentially dangerous drive to villages at 2,000 meters above sea level to distribute these emergency goods. On the way, He Youxin witnessed the collapsed houses of Qiang pepper farmers who had been living there for many generations. Here lay the crux of the problem: if the pepper harvest in 2008 could not be sold, there would be no money for reconstruction. A successful harvest requires certain conditions, but the rainy season arrived immediately after the earthquake, disrupting the earth's surface. This made the traditional open-air method of curing peppers impossible. Only the use of drying apparatus could help the farmers with their harvest.

He Youxin applied to the China Foundation for Poverty Alleviation to access funds to assist with production. With a grant of 700,000 RMB, he bought 60 pepper dryers and 10 generators. Waterproof cloth was also used to help with the air-curing process. In July, the harvest season, the association sent the dryers to villages that produced large amounts of the pepper, and provided the appropriate training. He Youxin came back to the mountain area, procured the pepper at a price per kilo 3 RMB higher than the market rate, and held trade fairs with Carrefour. To help those in the earthquake-stricken area, Carrefour decided to pay 80% of the contract in advance, which for most farmers was their first substantial income since the earthquake.

In 2008, the pepper association sold 34 tons of pepper through more than 100 Carrefour shops in China. One of the farmers, Jing Shihua, said he was very grateful for what had been achieved. “In the past, I could earn at most 6,000 or 7,000 RMB a year . Now I'm making 10,000 RMB a year.”



Peppers processing.



Pepper drying.



Buying peppers from local villagers.



Carrefour purchased vegetables from Maoxian farmers after the earthquake.

### Li Ye, WWF Programme Manager:

It is better to help people earn their money than give them the money directly. We are always mindful of sustainable development when implementing substitute subsistence projects in communities. Only in this way can we reduce the stress from neighboring communities on the natural resources in giant panda habitats. The growth of the pepper association demonstrates a case with wins on three sides: for the community cooperative, the NGO and the enterprise. The association also helped the recovery efforts of the pepper farmers at Maoxian County after the May 12th earthquake. The next step for the association is to improve its role as predominant market players, and assist more communities around the giant panda habitats. We believe the cooperation between WWF and the pepper association will ensure harmonious development covering both protection and development.



The villagers living at the center of Qingmochuan NR made significant sacrifices for nature conservation.

# Mountain Villagers

Miao Tao, Protection and Management Bureau at Qingmochuan



Miao Tao

With the resources of the mountains, the residents there live a simple life. Those who live in Qingmochuan Nature Reserve share the same simple lifestyle, but they must increasingly make sacrifices for the nature reserve. Whenever I ask if they feel it's a burden to endure all the limitations the nature reserve has imposed, they would say it was nothing. The nature reserve residents said even though they could not plant mushrooms and cut down trees, they could still earn money through other methods, like going out as migrant workers. How could their descendants live if they used up the mountain resources?

The May 12th earthquake destroyed the peaceful life of the village, causing 80% of the buildings to collapse and destroying the villagers' means of livelihood. How could they survive? The question of how to pay the huge reconstruction costs posed a significant headache for the villagers.

As villagers were struggling to recover their homes, and the Qingmochuan Nature Reserve's Management Bureau was wondering where it could find funds to support the village, WWF offered to help, approving some pilot projects on sustainable livelihoods at the communities of the nature reserve, including tea planting, beekeeping, marsh gas tank building and village tourism.

One day we made the three-hour walk from Qingmochuan town to Madigou in the remote mountains of the nature reserve to explore the potential site for a beekeeping project.

The villagers there were busy helping each other repair damaged houses. They warmly welcomed us, and asked some questions about the project. Some villagers were a little disappointed to learn we would first be helping select pilot households, who would then contribute some of their annual profits to help others. But most seemed to understand the reasoning behind this approach, and promised to let those who were experienced or kept more bees become the project's pilot households.

After visiting eight or nine households, we realized it would be too late for us to return to the town of Qingmochuan, and so decided to stay in the village for the night. We were wondering where to spend the night when a young man, Luo Gang, invited us to his house. At his house by the stream, we saw many finger sized cracks on the walls, as well as a decoration showing our host was newly married. Over a meal, I asked Luo Gang and his wife about their plans for the future.

Luo Gang was quite confident about his future. "We are young and strong. After the earthquake I thought about my future. I decided it would be hopeless to live in the mountains, and tried to persuade my father to move away from here, but he was not willing to leave. He said he could not get used to any place other than our village. Anyway, I plan to leave and build my new home away from here. I have land in town and

will start to build a house once I have enough money. You must come and have a drink when the house is built!"

"The biggest challenge for us is the funds needed to rebuild a house, but we can find a solution. The government will provide some assistance, I can borrow some money from relatives, and combined with a bank loan this would be enough to build a house. I could work outside in the cities to pay back the debts. I'm not the worst off. Some families don't have even one cent of their own, and they don't have any access to loans. How can they rebuild their houses when they don't have enough food?"

"Do you have any difficulties that the nature reserve can help you with?" I asked.

Luo Gang's wife looked at me eagerly. "Could you let us cut down some trees to sell, and to use?"

"How can you say that?" Luo Gang said angrily to his wife. "If everybody here wanted to cut down trees, how could it still be a nature reserve? The nature reserve is trying to help us with tea planting and beekeeping. How can you say such selfish words?"

I was deeply touched by his kindness and understanding.

Luo Gang let us to sleep outside the house in the only earthquake shelter, which was equipped with two beds covered with thick cotton-padded mattresses and clean quilts. It clearly belonged to the new couple. They wouldn't allow us to stay inside the house for the night in case there were aftershocks.

I was unable to sleep the whole night for fear of aftershocks, but even more so because of the emotion in me aroused by the villagers. They didn't mention a word of their post-earthquake needs to the nature reserve, but voluntarily looked out for the forest. Those who have never been in contact with these villagers would never understand their contribution. My respect for these villagers would push me to work harder to protect the natural resources while helping the villagers work towards a better life. Their sacrifice and contribution should be repaid. Thank you so much, the villagers of Qingmochuan Nature Reserve!



WWF supported community members at Qingmochuan NR to develop beekeeping as an alternative livelihood © WWF China

**Li Zijun, WWF :**  
WWF has made great achievements in giant panda protection in Qinglin. Through education and communication, the local residents have gained a strong sense of conservation. They have been cooperating with the protection work, making substantial contributions to these efforts. After the May 12th earthquake, the Qingmochuan Nature Reserve was one of the 20 most severely damaged giant panda habitats and forestry centers. With the support of WWF, the villagers there were active in exploring sustainable livelihoods, and regained the confidence needed to rebuild their lives. The overexploitation of natural resources could be avoided if the villagers were not forced back to the poor living standards caused by the disaster. Their contributions to the consolidation and development of giant panda protection, and the protection of panda habitats, is memorable.

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Thanks for WWF Chengdu office, Xi'an office and Volunteer Chee Chee Leung's contribution to this newsletter!

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- 确保可再生自然资源的可持续利用；
- 推动降低污染和减少浪费性消费的行动。

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- conserving the world's biological diversity;
- ensuring that the use of renewable natural resources is sustainable;
- promoting the reduction of pollution and wasteful consumption.

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