



The Science of Sacred Mountain

an extended interview with Dr. Lü Zhi

Buddhism's approach to the concept of protection is through an act of self-discipline. We've often wondered which would work best: laws which are based on punishment or economic incentives which are based on financial rewards. The Buddhist system is different. It comes from the heart of the people. - Dr. Lü Zhi



Dr. Lü Zhi is a professor of conservation biology at Peking University where she is also executive director of the interdisciplinary Center for Nature and Society. She is considered a world expert on the giant panda which she studied as part of her PhD in animal ecology and conservation at Peking University.

In 2007 Dr Lü founded the Shan Shui Conservation Center, an NGO focusing on developing community-based, grassroots solutions to conservation in western China. In addition to her role as chief scientist for Shan Shui, Lü Zhi has led programs for WWF and Conservation International. Her work has included field projects on the snow leopard, Przewalski's gazelle and Tibetan brown bear, along with the giant panda and other endangered species. An active participant at international conferences on conservation, Dr Lü has written and edited five books and dozens of articles, including a cover story in National Geographic about the giant panda and conservation in China.

Her research on the giant panda took her to the Tibetan region for the first time in the 1990s. What she found led to a deeper study of the Sacred Lakes and Mountains and a greater appreciation for the conservation practices of the Tibetan Buddhists. Excerpts from this conversation with film director Shi Lihong were included in the 20 minute video [Searching for Sacred Mountain](#), co-directed by Gary Marcuse.

In this more complete transcript or the interview Dr. Lü describes her first visits to the Tibetan area and how that led to the research on sacred lakes and mountains that she and her students carried out and published in 2013. This interview was translated by Yang Yueqing and edited by Gary Marcuse. Links to Dr. Lü's research, available in English, are found at the end of this interview.

Finding Sacred Mountain



Dr. Lü Zhi : When I first visited the Tibetan region in the 1990s I was surprised by what I found. At that time there was a lot of logging going on, but in some areas the original forest was preserved. There were huge trees 600 and 700 years old. In some of these areas the animals were not afraid of people. I thought this was very strange; why were these areas preserved? I asked the local people how this happened and they said "Oh, this is our sacred mountain." But what did that mean? How could this be possible?



I asked local forestry officials about this and they said that they did try to cut some of these trees but the local people strongly opposed them. So the officials said they would cut other areas first. This delayed the logging past 1998 when China halted logging throughout the country. [Editors note: logging was halted in the wake of disastrous floods when it became clear that logging in the upper watersheds was increasing the speed of the runoff and the frequency and severity of the flooding especially on the Yangtze and Yellow rivers.]

So the concept a sacred mountain alone was enough to preserve the resources. It seemed like it had the power of a law. That was very big shock to me. It was far more effective than the slogan that we came up with, as scientists, to persuade people to protect the pandas. At the time we promoted the idea that "to protect pandas is to protect humans." Compared to our efforts as scientists this belief in sacred mountains was far more powerful and effective. Later, when we were conducting a more careful investigation, I also noticed that Tibetan people never asked why we were trying to protect wild animals. For them it was obvious. Within their culture they already had this concept of non-killing, of not harming any life. To them, respecting all life and showing compassion was a good thing. These are part of their values.

That was very eye-opening to me because I had believed that for people to pursue profit or self-interest was a basic instinct and there was nothing wrong with saying "We want development, development and more development." At that time no one said development was wrong.

In economics there were many debates about this. We often heard it said that economic progress has distinct stages: at first, when people are poor, environmental protection would not be a concern. Only later, after we satisfied our own needs for food, clothing, shelter and heat would we look after other things like environmental protection and make them part of our daily life. In the West, this was the path of development as well.

So according to our economists the general understanding came down to this: develop and pollute first, clean up after. That would be the path. In Tibetan areas, in fact what I saw was the opposite of our experience and the experience of Western countries because the Tibetans held different cultural values.



Today people are beginning to reflect on how much and what kind of development we should have. But in the 1990s, when China was starting to develop, people were very excited about it and if anyone tried to object to development it could be a very difficult for them. But even then in the Tibetan region people were very much in favor of protection because of their cultural values.

So the cultural values of Buddhism are a great comfort to a scholar of conservation. Even though the Tibetan people were not rich, they could still think of taking care of other creatures. This is a kind of altruistic behavior. While they are not wealthy, they can still take other living beings into account. Not just other people, other creatures. In my case this gave me fresh confidence in humanity. If they can do it there is hope that other people could do this as well, isn't there? I felt all the way to the bottom of my heart that finally I had found a way. I think if this is possible what we called 'sustainable development' or 'green development' or achieving harmony between humans and nature may also be possible. Maybe there is hope for mankind.



Exploring Sacred Mountain

That experience opened my eyes and broadened my vision. It was a very profound education for me. It made me realize that we really did not understand anything about the sacred mountain system and the values that support it. I was brought up as an atheist. In the environment of my upbringing religion had no influence. After growing up I studied science and I intuitively resisted the idea of religion.

So it was time to be modest and to learn more about Tibetan Buddhism. I have studied it for many years now and while I would not say that I am a Buddhist, I have learned to respect it. This is enough for me, I think. If there is enough respect between people, the world would be a lot more peaceful.

In order to better understand the sacred lakes and sacred mountains we studied the relationship between the sacred mountains and biodiversity conservation. We wanted to use a very scientific approach that would include quantitative research. I think this was the first time this research has been done anywhere in the world.



One of my graduate students, Shen Xiaoli, spent five or six years investigating more than 200 sacred mountains [in the Ganzi Prefecture in western Sichuan province]. She wanted to answer a series of questions: How does the system work? Is it still functioning? What percentage of sacred mountains are still functioning? What is the impact? What difference does it make? Who was actively involved in protecting them? What is their relevance today? Could these efforts be incorporated into the institutional model of environmental protection?

Near the beginning of our research I also learned more about it from some local officials. I once went to Chamdo [just outside of Ganzi in the Tibetan Autonomous Region]. I asked the local director of the forestry bureau how many protected areas were in his district? He told me that they have more than 50 protected zones. I said I knew that the entire Tibetan Autonomous Region only had around a dozen protected areas [These Sanjiangyuan National Nature Reserves were established in the headwaters of the Yellow, Yangtze and Mekong rivers starting around 2001].

So I asked the official how he could have 50 protected areas in his region? He said "there are more than 50 sacred mountains nearby so we contracted all of the mountains to the local people. We signed agreements to allow them to protect the mountains and therefore they all became protected areas." This was the chief of the state forestry bureau. He was in charge of a major department of the state government and he accepted this sacred mountain system.

So that was encouraging and we began to wonder about the possibilities. If Chamdo was able to do this, were other districts doing the same?

Collaborating with Monasteries

Gradually we discovered that a number of other local governments had also taken this approach. They were collaborating with the monasteries and the local people to enforce the protection. In one case a number of local lamas signed agreements with the local forestry bureau which gave the lamas responsibility for forest fire prevention.

In another case a number of temples signed formal protection agreements with the local forestry bureau and the local governments that gave the monasteries the authority to protect 13 holy mountains in their vicinity. So it was clear that some local governments had long been aware that the religious culture had played a very important role in the protection of the environment. Allowing them to take care of the protected areas was effective. These kinds of arrangements were not high profile but they do exist. This was encouraging.



The Science of Sacred Mountain

Having mapped a significant number of sacred mountains the research team then set out to test whether areas described as sacred were actively protected, and whether there were qualitative differences between sacred mountains and neighboring regions that were not described as sacred.

Sacred Mountains in the Ganzi Prefecture in western Sichuan province. What the researchers found.



The survey by Dr Lu Zhi and her colleagues at Peking University focused on the sacred mountains in Ganzi Prefecture, a subdivision of Sichuan province. Historically this region, which is about the size of New York state (153,000 sq. km), would have been part of an ancient Tibetan empire.

From 2004 to 2007 The researchers visited 74 monasteries in six of the 18 counties that make up Ganzi Prefecture. They visited 1/3 of the monasteries in each county and documented 213 sacred mountains. 154 of these sacred areas were mapped using GIS.



Based on an average of three sacred mountains around each of the monasteries and a total of 500 monasteries in the prefecture they extrapolated a total of 1500 sacred mountains. The total land mass of these protected areas in Ganzi alone is in excess of 46,000 square kilometers. More than 30% of the prefecture is protected. If the protected areas were combined they would be larger than the total area of Vermont and New Hampshire combined.

Some of these sanctuaries maintained by Tibetan Buddhists may be as old as Buddhism .

Lü Zhi: On closer examination, we found that the majority of sacred mountains were still functioning. Of course in some cases the system broke down but the majority were still working. In practice some areas of a sacred mountain are very strictly protected, very much like our scientific approach to protecting ecosystems. Around the mountain there is a core area where nothing was allowed to be touched. Around this was a broader area —usually the transition areas between mountains — where killing was not allowed. No living beings should be harmed, these sort of rules. So their system was very similar to our ecological protection system.



At a deeper level, the belief in cause and effect in Buddhism is similar to the reasoning of ecology. Ecology is the study of relationships: i.e. the things you do today will have consequences tomorrow. This is central to ecological studies and to Buddhism. So I think there are a lot of similarities here. The difference is that science speaks with evidence and Buddhism speaks with philosophy.

On the social level, the rules associated with sacred mountains were supported by an educational system that advised people not to do anything against the rules. Hunting, for example, was completely prohibited. If someone did violate the rules they could be punished. One form of punishment involved baking animal-shaped pastries. If you killed an animal, you would have to take a wooden mould, press it into barley flour paste, and make ten thousand pastries in the shape of the animal. Each time you made one you would have to apologize by saying "I'm sorry, I made a mistake, I made the mistake of killing, and I won't ever do it again."

I thought if a person repeated that 10 thousand times maybe they would really be convinced. At least it would leave a deep impression. Another punishment included taking part in patrolling the mountains. In many places the temples and the local people collaborated on these patrols, especially during the Chinese Lunar New Year season when there a lot of people in the mountains.



A sacred lake in the Nianbaoyuze mountains in eastern Qinghai province

In addition we compared the impact of the sacred mountains on biodiversity. Within the study area we examined areas where the traditional culture was still relatively strong and compared them with other places where there was more contact with the outside world and the traditional

culture was slowly fading out. The difference in biological diversity was very obvious. Our bird survey demonstrated that in areas where the local cultural tradition is strong there is greater biodiversity and a greater abundance of wildlife. So the impact of the sacred mountain protection system was demonstrated scientifically.

Combining tradition and modern conservation: Hiring the Protectors

Our next step was to contact local government and to pass on our research and scientific evidence. We felt that due to language problems and other issues that this information may not be well understood and so we should encourage more communication between the local people and the authorities. And we could act as a bridge. We knew that the local governments were tasked with protecting the national nature reserves and the local people had already demonstrated their ability to protect. So how could we encourage more formal arrangements between local people and the government?

In some places we helped to arrange a formal collaboration. Our Shan Shui NGO, the local governments, the temples, and local people all came together to form a multi-party agreement. For example, in Ganzi



Filmmaker and Tibetan scholar Tashi Sange founded an NGO to protect the environment in the Nianbaoyuze mountains.

Prefecture we initiated a cooperative protection agreement. According to the agreement the government authorized the local people to carry out the monitoring and protection in keeping with existing cultural practices. These kind of arrangement also demonstrated that the formal system of government and institutions recognized, respected and permitted the traditional practice of protection conducted by the local people.

Sharing evidence of Green Tibetan Buddhism

The Shan Shui NGO also provided training for monks and local people in the use of video equipment to document their work, and the use of infrared cameras to monitor wildlife in remote valleys. The infrared cameras provided additional scientific evidence of the efficacy of the patrols and the importance of the protected areas in preserving biodiversity. The results of the monitoring could be shared with local communities and the outside world.



Lü Zhi: The original motivation of the local people to protect the sacred areas may stem from their culture because it is their sacred mountain, their hometown. Now they could also demonstrate scientifically that their efforts are effective. So this began a process of integration, bringing together science and tradition. This is what we had dreamed of, an ideal scenario.

We believe that if this can be more widely communicated then we would be able to convince

more prominent figures from the society and the government to become interested in this collaborative protection process and support it. So our current task is to sum up the our experience and our findings and communicate them to the outside world.

In summary this is what we concluded: it's very clear that local people can manage the protected areas. They do a better job than our official protected zones, and they do it in a way that is more sustainable and more cost-effective than what we have been trying to do in the official nature reserves. If the state has funding for protection then these protectors should get the benefit. Protection can even become a way for the local people to make a living. This would support the local economy and protect the environment. The entire protection system would be well structured and supported.



Links

Dr. Lü Zhi et.al Research on Sacred Mountains

Shen, X., Z. Lu, S. Li, and N. Chen. 2012. Tibetan sacred sites: understanding the traditional management system and its role in modern conservation. *Ecology and Society* **17**(2): 13 [Link](#) [Download PDF](#)

See also

Ecological Conservation, Cultural Preservation, and a Bridge between: the Journey of Shanshui Conservation Center in the Sanjiangyuan Region, Qinghai-Tibetan Plateau, China [Link](#)

Tibetan Monasteries Serve as a Critical Allies for Snow Leopards Panthera [Link](#)

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