Living natural history in the mountains of southwest China

Many of China's national protected areas are essentially off-limits to both Chinese and foreign visitors alike. Ed Grumbine ponders the need to protect these special places, given China's burgeoning population, but regrets the loss to science of being unable to study some of the most diverse old-growth forests in the world.

Some things are bound to go wrong when three travelers who join together on a trip each have different goals. Apu, a 27-year-old Han Chinese with a degree in anthropology and a passion for hiking, wanted to cross the high, snowy mountains of Baimaxueshan ("White Horse Snow Mountain") National Nature Reserve; at 349 000 hectares, it's the second-largest protected area in southwest China's Yunnan Province. Winter was coming and this would be his last hike of the season. I was happy to climb over the mountains too, but what I really wanted to do was visit Yunnan's mid-elevation, old-growth, temperate deciduous forest and compare it with stands that I had studied as an undergraduate years ago, in the wilds of Tennessee's Great Smoky Mountains. Our young companion Bounsing, fresh from the tropical hills of northern Laos and living in Yunnan to learn Mandarin, had never seen snow; he simply wanted the thrill of touching frozen flakes of white crystal for the first time. But because of the uncertainties of travel and politics in rural China, I was the only one of us who realized his goal, and it took most of the trip to do so.

I was also the only member of the group who had any sense of the scientific study of natural history, taxonomy as a formal practice, something one "does" (Hampton and Wheeler 2011). Neither Apu nor Bounsing had ever flipped through a field guide or knew the Latin name of a single bird or flower. Yet both young men had a deep understanding of the natural world: the rhythm of seasons sensed from familiarity with subsistence agriculture; which trees are best for fuel and timber; what wild herbs might cure a cold; when in autumn to expect the ephemeral passage of flocks of birds. Theirs was a rich sense of nature, gleaned from lives growing up in the hills and fields of rural Asia. We were all "city people" now, and university educated, but not so far removed that we couldn't slip back into the countryside to feel the pace of the fall harvest and wonder at the glittering mountain stars.

Our sense of the land and its seasonal changes provided personal fulfillment but the trip nevertheless featured intractable problems. Apu and Bounsing were denied their goals because one cannot camp in Chinese national protected areas without a permit, which is extremely difficult to obtain. To protect nature in China's most special places, overnight public visitors are officially banned. Local people gain part of their living from grazing and gathering in the reserves, but outside visitors are excluded.

Parts of this policy make sense. As China's middle class mushrooms in size toward 300 million, with concomitant disposable income and leisure time, there are tens of millions of potential new tourists set to visit the country's protected areas. Yet the government lags behind in building the infrastructure and training the personnel needed to ensure that tourists have a satisfactory experience, while also protecting the reserves from being trampled to death. Chinese park policies look good on paper but have a poor history of implementation (Grumbine 2010).

Figure 1. *The author, ready to head to Baimaxueshan Reserve.*

And, as I learned on this trip, there are deeper issues as well. Reserve policies set up multiple dichotomies that challenge outsider definitions of natural history practice. On the one hand, subsistence farmers and pastoralists depend on summer pastures to graze their yaks and cows; they cannot raise animals without access to mountain meadow forage. Tibetan and Lisu minority herders know the Baimaxueshan Reserve better than anyone; theirs is a lived and living natural history, a practice with a capital "P". On the other hand, without a permit for conducting officially approved scientific research, foreigners are denied entry to reserve core areas, where uncut forests grow and alpine ridges harbor a great, virtually unstudied diversity of plants. Visitors will never know that Yunnan harbors what may be the most diverse deciduous forests in the world, will never encounter unique timberline species, or will never follow the ridge-top migratory behavior of China's numerous birds of prey. In national nature reserves, government policies block direct experience of these ecosystems and species, and without experience, there can be no appreciation or understanding (Fleischner

2011). This is one reason (among many) why the study of natural history is virtually unknown to most Chinese.

Other dichotomies are set in motion by this fundamental fact. Despite access to reserves and their resources, residents of neighboring villages remain disadvantaged; one farmer I met earned in one year only half of what I make in a month. These villagers want the right to guide visitors into the mountains to gain extra income, but government rangers enforce the rules. Local incomes therefore remain stagnant, resulting in people moving away from the living natural history of their homelands to China's rapidly growing cities and the employment opportunities they offer. Local–visitor, poor–wealthy, rural–urban: these dichotomies connect in complex ways that define life in contemporary China.

I mulled over these issues as we climbed into a steep canyon for a day's hike into Baimaxueshan Reserve. We followed a herders' track that ultimately – if we had a permit – would have taken us over a 4300-meter-high pass and, days later, led us down to the Mekong River on the far side. To accomplish this, Apu and Bounsing would have to wait for another trip, but I was in luck – in this narrow ravine, where water sluiced down to moss-covered bedrock, never-cut deciduous forest grew. Ancient maples, basswood, cherries, and oaks reared skyward, clinging to boulders with massive roots. Unseen birds whistled from the canopy, but I did not know their songs. There is a book of all the native birds in China and a heavy coffee-table volume that focuses on Yunnan's birds specifically, but there are no handy keys for local species and very few popular field guides readily available in Mandarin or any other language.

But my goal was met; I was inside an ancient forest related to those of the southern Appalachians in the US and linked in time to the great temperate forests that wrapped around the planet's northern latitudes some 25 million years ago. How far back in time did this stand go? No one can tell, as there are no peer-reviewed studies published on the ecology of these forests.

We turned back, caught in the invisible snare of state policy. My companions would not gain the high country or see snow on this hike. Our Lisu guide would not earn extra income from leading us on a longer, 5-day camping trip; his son would soon leave the mountains behind altogether, for life in one of China's supernova cities. Any potential Chinese tourist would have to be content with an out-of-context picture of an old forest, a snub-nosed monkey, or a snowy mountain peak, downloaded off the internet.

Then we were back in the village, where farmers weren't contemplating forests or poverty; they were gathering walnuts and dumping yak manure on just-harvested corn fields. Some natural history practice is lived so close to the bone that there isn't enough time to think about it – you just do the work, watch the weather, and if there is time at the end of the day, have a drink to celebrate the harvest.

China is developing at a rate and scale that is unprecedented in world history. The oldest continuous culture is evolving new cities, social mores, global status, and, of course, some as-yet-unknown political position. Throughout this complex transition, maybe a more salutary nature reserve policy will come to be part of the mix (Zhou and Grumbine 2011). And there is no reason to believe that only rural Chinese will retain a living sense of natural history. Balanced against the tidal waves of change is the chance for a better life, one with more education and leisure time. With these benefits come opportunities for the Chinese, who already love their country deeply, to learn about, appreciate, and protect what is most special about their country's wild, natural heritage.

Figure 2. *Apu in old growth forest.*

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