

專訪高山守護者全鴻德

無塵心靈 無痕山林

Leave No Trace

Interview with Hong-de Cyuan, the Mountain Guardian

有東北亞最高峰之稱的玉山，海拔3952公尺。而玉山國家公園涵蓋面積105,490公頃，囊括了全台將近3分之1的名山，園內峰次崢嶸，山頭連綿無際，風景秀麗，是許多山友必造訪的地方。高山中孕育著多樣性的物種，及許多豐富的林產資源；然而，由人類所「衍生」出來的垃圾，卻也同時與它們並棲相存著。

環境保育 由根開始

「真正的環境教育應該由小開始，從小就建立孩子環境保育的重要性，讓他們對這樣的觀念養成理所當然的習慣，學著如何與大自然共生共存。」塔塔加服務中心的主任全鴻德語重心常的說。

在山中服務多年，全主任感嘆現代人將太多的重心放在如何致富賺錢，環保知識的養成不足，缺乏保育倫理概念，自然會對環境的維護有一定的影響。目前政府或學校教育的宣導大多只著重在平地垃圾處理的觀念與實施，許多人將平地的習慣帶至高山，卻不清楚山上與平地特性的不同，往往造成了理念的衝突，最受衝擊力的還是環境的超載與犧牲。

就像警察一樣，身為「森林保姆」之一的全主任除了要維護山林的生態與資源，也須「取締」對高山環境造成髒亂或破壞的人。曾有一次請離去的遊客順手將桌上的衛生紙帶走，卻也因為遊客的高山教育認知不足而差點發生衝突。

Known as the highest peak in North Asia, Yushan has an height of 3,952m and YSNP with an area of 105,490 hectares. YSNP covers almost 1/3 of Taiwan's well-known mountains, making this beautiful mountain region a must-go for climbers. Residing along with the wild life and resources, however, are the waste and garbage produced by mankind.

Environmental Education Starts with Root

“Real environmental education should begin in childhood. Children should be taught the importance of environmental protection and get used to thinking environmentally and co-existing with nature,” said Hong-de Cyuan, the director of Tataka Tourist Center.

Having served in the mountains for years, Cyuan sighs at the thought of people nowadays caring only about making money instead of protecting nature. Current governmental or school education only focuses on the teaching and implementation of waste disposal on plains. Not knowing the differences between mountains and plains, many people go to the mountains with such knowledge, resulting in the overloading and sacrifice of the environment.

Like a police officer, Director Cyuan who is one of the “forest guardians” does not only protect mountain ecology and resources but also “writes tickets” to those who litter or damage the mountains. Once a fight almost broke out between Cyuan and some tourists who were requested to bring back their toilet paper.





默默耕耘的守護員捍衛山林之美。圖為玉山箭竹草原 / 呂理雍攝
Mountains cleaners working hard to keep nature clean. The photo shows the grassland of *Yushania niitakayamensis* / by Li-yong Lyu



「其實，這也不能全怪他們。」全主任無奈的說。畢竟當許多在平地「理所當然」的行為到了山上卻無法等同視之的處理時，難免會無法立刻接受。「所以根本的觀念建立真的很重要，台灣不是只有平地，這些高山、大河、海洋也都是屬於台灣的一份子，大家都應該要學著去體會、了解它們的存在。」

嚴以律己 寬以待山

由於山上緯度較高，有機物分解緩慢，一張衛生紙可能數十年都無法腐化，垃圾的複雜性及累積的量愈多，相對也形成高山環境嚴重的負荷力。所以強力執行「垃圾不留山」一直是守護員們必奉的使命，也是大家都應遵守的責任與義務。

然而看到壯麗的景色，煩惱忘了，連這些責任義務也都忘了。很多人把爬山當郊遊，帶了一大堆喜歡吃的食物，甚或一些不必要的東西，不僅容易造成自己身體上的負擔，也因為裝備多了，需要處理的垃圾也就多了。身為布農族的全主任年輕時期就爬遍了整個玉山國家公園，對於山勢的險峻根本不放在眼裡。「以前我們上山，只要帶米和鹽巴幾乎就可以了。」全主任憶道。「可能現在的人平日比較缺乏運動，所以爬這樣的山路要算是一種劇烈的活動了。加上高山裡的氧氣稀薄，當爬上來時，已經沒什麼食慾，那些食物也就形成無所謂的浪費。」遊客在登山時，應清楚了解自己各方面的狀態，在體能、配備或食量等方面皆需做適宜的規劃，減少垃圾產量甚至過度負荷所帶來的危險性。

“You can’t blame it all one them,” said Cyuan, who pointed out that it is hard for tourists to change their practice of waste disposal when they do not know the differences between plains and mountains. “This is why education is very important. Besides plains, Taiwan also has mountains, rivers, and seas, which all should be learned and appreciated by us.”

Strict Self-discipline for the Sake of Mountains

Due to the high altitude, organic matters decompose more slowly than they do on plains – a piece of toilet paper may not be decomposed for decades. A massive amount of diverse waste would seriously overload the mountains; this is why it is extremely important that not a piece of garbage is left behind.

Like our earthly troubles, our obligations to the mountains are perhaps also gone with the wind when we see the beautiful sceneries. Many people treat hiking like a picnic – they take lots of food or even unneeded things up on the mountains, causing physical stress as well as garbage. As a member of the Bunun Tribe, Cyuan have climbed all the mountains in YSNP when he was younger, and the steep slopes were an easy match. “We only needed rice and salt when we climbed. Perhaps today’s people do not exercise as much, and climbing the mountains in an intense activity for them. With the thin oxygen, you would already lose your appetite when you reach the top, and the food would go wasted.” Climbers need to understand their physique and make arrangements regarding training, gear, or food in order to reduce generating too much waste in the mountains.

「有時候遊客會問我們哪裡好玩？或哪裡怎麼走？我們就會開玩笑的要他們看到哪裡垃圾最多代表最好玩，沿著垃圾走也不會迷路了。」全主任笑笑的說。大約每兩個星期，全主任和其他巡守員，及一些熱心的志工都會進行例行性的淨山處理。每次清運出來的垃圾量都可重達數百公斤以上，甚至曾有數噸的紀錄。在做完適當的分類處理後，再經由「認養」帶下山，往往都需要揹負10到20公斤的重量；若碰到較大規模的活動時，其垃圾處理量甚至得出動直昇機來載。除了無以計量的數目，更另人憂心的是其潛在性的危機。曾有遺留的瓦斯罐突然爆破而使清理員受傷；不小心碰到藥物的針頭或器具時，也都深怕染上不知名的病。

令人感動的是，這些山林守護者依然不放棄地堅守自我的理念，持續為國家生態盡己之心力。淨山，不單只是跟著團體才算有行動的效益，只要每個人都能順手將垃圾帶下山，即使只有一小袋，都可為山林的環境盡到多一份保障。

有念共識 無痕山林

LNT全名為Leave No Trace，起源於美國在1980年初期興起的荒野環境保護運動，當時各生態研究家有感於隨著登山、露營等野外活動的使用率攀升，環境破壞亦隨著倍數成長。土壤遭受侵蝕、動物生態與棲息地受影響而遷移，或甚至人文史蹟遭到破壞殆盡。美國各級政府的土地管理單位便積極與環境保育團體、教育學者、戶外登山用品的製造銷售商等公私部門，與社會大眾一起發起全國性的教育推廣活動，本著「負責任的品質旅遊」忠旨，教導大家對大自然環境應懷有的尊重及正確觀念，共同協助環境資源的保護，並降低其衝擊力。2006年在林務局的推動下，LNT以「無痕山林運動」在台灣命名上市。推行概念也就像字面那樣單純「離開，不留下任何垃圾。」

“Sometimes tourists ask us what are the fun places or routes, and we would jokingly tell them to just follow the trail of garbage to fun places.” said Cyuan with laughter. About once every two weeks, Cyhuan and his team of patrollers and volunteers inspect the trails, and the garbage cleared out often measured in several hundreds of kilograms, or sometimes even tons. After sorting, the garbage is then carried down the mountains, with each person carrying about 10~20 kg. After a large scaled event, the amount of waste can be so huge that helicopters would be needed. Besides the vast amount of waste, another problem is the hidden hazards such as propane cans that exploded and wounded the janitors or syringe needles or similar items that seriously threaten the health of the staff.

The touching thing is that despite these hazards, the guardians still stand their grounds and continue protecting the environment. Cleaning the mountains does not have to be a group effort – tiny things such as bringing home your own garbage can make a world of difference.

Leaving No Trace in the Woods

LNT stands for “Leave No Trace” and is an environmental movement started in the U.S. in the early 1980s. During that time, many ecologists discovered the damage to environments as more and more people engaged in climbing and camping, resulting in soil erosion, damaged or relocated habitats, or damaged historical sites. Land management departments in the U.S. then actively worked with environmentalists, educators, and sports gear makers to conduct national education and teach the public about “responsible and quality recreation” and protecting nature by reducing their impact on the environment. With the help from the Forestry Bureau in 2006, LNT was introduced to Taiwan under the name “Movement of Leaving No Trace in the Woods,” which promotes the idea of “leaving behind no garbage in the woods.”



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1. 背負重達10幾公斤的裝備，攀登八通關 / 全鴻德提供
Climbing Batongguan with gears weighing more than 10 kg. / provided by Hong-de Chuan
2. 嘉明湖營地一帶的垃圾，「天使的眼淚」是在為誰哭泣 / 玉山國家公園的保育志工 陳大森攝
Waste around the Jiaming Lake camp ground. For whom is the “angel’s tear” being shed? / by Dasen Chen (YSNP Volunteer)

3. 八通關草原處營地的垃圾。壯闊的美景下隱藏的是刺眼的悲哀 / 賴光亮攝
Waste around Batongguan camp ground. What is underneath the beautiful scenery is the unsightly sadness. / by Guang-liang Lai
4. 在廣大的山林中登山巡查，維持整片山林的潔淨是他們必奉的使命 / 全鴻德提供
Patrolling in the mountains. Keeping the mountains clean is their mission. / provided by Hong-de Chuan

有高山王國之稱的尼泊爾，向來是喜好登山者心中嚮往之地，在高山品質的維護上更有一定的執行力。如欲進入世界第一高峰珠穆朗瑪峰登山者，需先繳4000美元的押金，並且在入口處會一一嚴格盤查旅客所帶的每項物品，排遺（遺便）也務必帶下山。全主任表示，LNT 應是隨著各地理環境的不同，而有著適當的調整與改善。台灣的高山氣候多雨，海拔平均高度也沒有尼泊爾那樣高，所以排遺或可堆肥廚餘（如樹葉、果皮、蔗渣、蛤蜊殼、蝦蟹殼、茶葉渣、花生殼、未經煮熟之蔬菜等）可直接埋於土壤使其吸收，其餘無法分解的再自行帶下山。

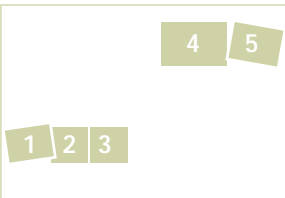
玉山的風景壯麗，旅客人數每年總是多達萬人以上，為了解決排遺的問題，全國首兩座乾式廁所將出現在塔塔加登山口與排雲山莊之間。所謂的「乾式廁所」顧名思義就是不用水沖，而是將人體的排泄物與木屑菌種等混合，只要轉動把手，啟動發酵裝置，就可以分解成水和二氧化碳，讓廢棄物回歸於大自然。故使用時除了依指示放入腐植土，蓋好蓋子不讓它淋雨潮濕，也切紀絕不能另外沖水，以免糞桶因積水無法接觸空氣，進行分解。

全主任也提醒到，廁所內設置的垃圾桶是體諒到總有些人不願意將擦拭過穢物的衛生紙或紙巾當作隨行的垃圾，請遊客們能感受工作人員的用心，勿再將其他垃圾丟入桶內，甚至糞桶中，而失去設置的意義。

Known as the kingdom of mountains, Nepal has always received many mountaineers and maintained good mountain environment protection. Before entering the area of Mt. Everest, climbers need to pay a 4,000 USD deposit, and every single item that will be taking up the mountain is inspected at the entrance. Climbers are also required to bring down their waste (including bodily waste) when they leave the area. Cyuan stated that LNT is adjusted appropriately for different regions. Taiwan's mountains doesn't have more rainfall and higher elevations than those in Nepal, so human waste or kitchen waste (e.g., tree leaves, fruit skin, shell, tea, or uncooked vegetable) can be buried, while the things that cannot be decomposed should be brought back.

To provide enough sanitation facilities for the tens of thousands of tourists received by Yushan each year, two composting toilets are installed which do not flush with water but mix human waste with saw dust fungus. With a turn of the handle, human waste is decomposed into water and CO2. This is why this kind of toilet requires humus which must be lidded and kept dry, and no water flushing can be used in order to prevent the waste from being separated from air by water, hindering decomposition.

Cyuan also mentioned that the waste buckets inside the toilets are there because the staff understands that tourists would definitely not want to keep used toilet paper or tissue paper with them. Therefore, Cyuan would like to remind tourists not to throw other kinds of garbage into the bucket or even the toilet.



1. 在溪流邊仔細清潔垃圾，盡心守護河川生態環境 / 全鴻德提供
Cleaning up the garbage along the creek and protect nature. / provided by Hong-de Chuan
2. 守護員與志工「認養」垃圾，背下山並做處理分類 / 全鴻德提供
The cleaners and volunteers "adopt" garbage and carry them down for sorting. / provided by Hong-de Chuan
3. 登高淨山，沉重的裝備如同肩負的重責使命 / 全鴻德提供
Climbing the mountains with heavy gear. / provided by Hong-de Chuan

4. 在八通關的白洋金礦山屋前處理垃圾。避免傷及清潔人員，使用鐵槌將碎塊垃圾再仔細敲碎，用意在於壓縮垃圾的收集量，以減低負重壓力 / 賴光亮提供
Waste being processed in front of the Baiyang Mine Cabin in Batongguan. To avoid injuring the cleaners and compress the waste, the garbage is smashed into tiny pieces with a hammer. / provided by Guang-liang Lai
5. 守護員在步道下方清潔垃圾。美麗的山林背後，往往是守護員一點一滴的汗水與勞力堆砌而來的 / 全鴻德提供
The cleaners cleans up garbage. The mountains are beautiful thanks to the mountain cleaners' hard work. / provided by Hong-de Chuan



共體維護 永不嫌遲

從24歲入山至今，全主任伴玉山走過了10幾年頭，就像在帶自己的孩子一樣，盡心全力去呵護它的美好，也不斷努力找機會去發現它的潛在性，碰到了再多的挫折還是不放棄各種可能的方法與改善空間，即使過程中總是充滿悲喜與挑戰。「我只是做認為自己該做的事，所以從不覺得自己有多大的奉獻或是過人之處，」全主任堅定的說。「其實有更多人默默的在做更多的事，只是他們把全心都放在這片山林上，沒有什麼時間可以分享他們的心得。希望有機會，大家可以聽聽他們動容的故事或心聲，一起來為生態多盡一份心力。」只要可以真正體悟山林的心聲，一起體會共存它的美好，永遠都來得及。

全主任的胸懷有如玉山那樣的廣闊奔放，下次登山時，除了眺望壯麗秀雅的美景，也別忘了這些山林背後默默的守護者，更別忘了將手中的垃圾帶回去喔！

Joint Effort is Never Too Late

Ever since entering Yushan at 24 year of age, Cyuan has accompanied Yushan for more than a decade and constantly looked for its hidden beauty. Despite the setbacks, Cyuan continues to look for ways to improve the management of Yushan's environment, even when the process may be full of hardship and challenges. "I am just doing what I think I should be doing, so I never think I am better than others." With a firm tone, Cyuan said, "Actually there are many people who are working hard quietly. They work so hard that they don't have time to share their stories with us. I hope one day people will get to hear their stories and also work for the environment." As long as you want to enjoy nature's beauty, it is never too late to contribute in the joint efforts.

Cyuan's vision is as grand as Yushan's magnificent beauty. In your next trip to the beautiful mountains, don't forget the people working hard to protect the mountains, and remember to bring back the garbage with you!

全鴻德 小檔案 About Hong-de Cyuan

學歷：靜宜大學生態所碩士

經歷：

1. 執行2007玉山國家公園塔塔加遊憩區植物相調查計畫
2. 參加第三屆國際原住民文化及生態多樣性學術研討會
3. 天下雜誌2007年三月專訪全球暖化及氣候變遷議題與實地玉山現勘。
4. 主持林務局布農族民族植物研究計畫
5. 發表台灣原住民教育問題檢討文章，台灣原住民媒體引用於2007年聯合國原住民會議發表並討論

著作：

1. 大自然雜誌第96期刊載《高山上的布農植物》
2. 行政院農業委員會林業試驗所林業研究專訊《塔塔加地區高山植物的物候期》
3. 生態臺灣第十期期刊文章刊載《喝酒與原罪》、《反省、築夢與踏實——我在生態學研究所》等多篇文章

Education:

Master's Dept. of Ecology, Providence University

Experience:

1. Implemented the survey of vegetation in Ta-ta-jia area in Yushan National Park.
2. Participated in the 3rd International Aboriginal Culture and Ecology Diversity Seminar.
3. Interviewed by Common Wealth Magazine in March 2007 regarding global warming, climate changes, and Yushan surveys.
4. Hosted the Bunun Tribe Vegetation Research Project initiated by the Forest Bureau.
5. Published articles regarding Taiwanese aboriginals' education issues. The articles were cited by Taiwan's aboriginal media for releasing in and discussed in the 2007 UN Permanent Forum on Indigenous Issues.

Publications:

1. "Bunun Plants in the Mountains," The Nature Magazine, v(96).
2. "Ta-ta-jia Area and the Phenology of Mountain Vegetation," Taiwan Forestry Research Institute. Other articles such "Drinking and the Original Sin" and "Reflection and Hard Work – My Days in the Department of Ecology" published in Ecology Taiwan v (10).

