

行政院農業委員會林務局委託研究計畫系列(系列編號 1001A016)

## 雪霸自然保護區志樂河流域

哺乳類、鳥類、昆蟲、水棲生物及軟體動物

資源調查暨重要物種保育現況分析

Survey of mammals, birds, insects, aquatic species and snails

and conservation of important species

of Sheipa Nature Protected Area Chih-Le River



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## 摘要

本計畫針對雪霸自然保護區中的志樂河流域進行哺乳動物、鳥類、蛙類、水生生物及軟體動物的調查，今年以高海拔為主要調查範圍，並增加水生生物調查。

累積兩年度資料，使用現場觀察、自動照相機、蝙蝠偵測器以及 Sherman 式捕鼠器調查，總共記錄 29 種哺乳類，包括瀕臨絕種保育類台灣黑熊 (*Ursus thibetanus formosanus*) 1 種，珍貴稀有保育類水鹿 (*Cervus unicolor swinhoei*)、台灣長鬃山羊 (*Capricornis swinhoei*)、黃喉貂 (*Martes flavigula chrysospila*) 與穿山甲 (*Manis pentadactyla pentadactyla*) 4 種與其他應予保育類台灣水鼬

(*Chimarrogale himalayica*)、台灣獼猴 (*Macaca cyclopis*)、山羌 (*Muntiacus reevesi micrurus*) 和白鼻心 (*Paguma larvata taivana*) 4 種。中大型哺乳動物相主要為中高海拔的物種，但沒有食蟹獾 (*Herpestes urva*) 的分布，黃喉貂則局限分布在志樂溪上游高海拔地區，今年度並持續拍攝到台灣黑熊，顯示此區為雪山山脈重要的黑熊棲地，食肉目以鼬獾 (*Melogale moschata subaurantiaca*) 為優勢物種，偶蹄目動物部分，以山羌與台灣長鬃山羊為主，水鹿的族群主要分布在志樂溪上游的高海拔地區，族群量不高，而在雪山西稜與大小劍區域現今仍然沒有發現有水鹿分佈，山羌分佈海拔可以高達 3500m 左右，台灣長鬃山羊則廣佈整個流域，各個海拔與棲地類型都有分布。穿山甲僅在帽子山稜線發現幾處掘痕洞穴，可能為周邊地區擴散來此區的亞成體，在志樂河流域內應沒有穩定的穿山甲族群，但這可能是穿山甲的最高海拔紀錄 (2900m)。分析比較本區較易受到人為活動或狩獵影響的偶蹄目動物，顯示志樂河流域的人為活動尚低，不至於大到影響這些偶蹄目動物的日活動模式及族群量。鳥類則記錄 71 種，包括瀕臨絕種保育類熊鷹 (*Spizaetus nipalensis*)、林鵰 (*Ictinaetus malayensis*) 與遊隼 (*Falco peregrinus*) 3 種，珍貴稀有保育類大冠鷲 (*Spilornis cheela*)、黑長尾雉 (*Syrnaticus mikado*)、

藍腹鵯 (*Lophura swinhoii*)、黃山雀 (*Parus holsti*)、小剪尾 (*Enicurus scouleri*)、大赤啄木 (*Dendrocopos leucotos*)、綠啄木 (*Picus canus*)、鵲鵯 (*Glaucidium brodiei*)、黃魚鴉 (*Ketupa flavipes*)、黃嘴角鴉 (*Otus spilocephalus*)、褐林鴉 (*Strix leptogrammica*) 與灰林鴉 (*Strix aluco*) 12 種以及其他應予保育類深山竹雞 (*Arborophila crudigularis*)、台灣藍鵲 (*Urocissa caerulea*)、煤山雀 (*Parus ater*)、青背山雀 (*Parus monticolus*)、火冠戴菊 (*Regulus goodfellowi*)、紋翼畫眉 (*Actinodura morrisoniana*)、白尾鵲 (*Myomela leucura*)、小翼鵲 (*Brachypteryx montana*) 與鉛色水鵲 (*Rhyacornis fuliginosus*) 9 種。蛙類有 6 種，為中低海拔山區常見物種。在志樂溪上游溪谷則發現有瀕臨絕種保育類台灣山椒魚 (*Hynobius formosanus*)，保有台灣山椒魚相當不錯的棲息地。

無脊椎動物部分，在志樂溪上游高海地區調查到陸域昆蟲 3 目 15 科 36 種、在志樂壩地區，加強調查上一年度較少資料的鞘翅目昆蟲，總計調查到 22 科 109 種甲蟲，另外亦調查到鱗翅目昆蟲 15 科 62 種及毛翅目昆蟲 13 科 25 種。統計 2 年度資料共有鞘翅目昆蟲 22 科 121 種，鱗翅目昆蟲 21 科 201 種及毛翅目昆蟲 16 科 34 種。軟體動物陸棲蝸牛本年度在高海拔地區沒有發現任何個體，下游地區也未新增物種，總計 2 年度陸生貝類為 10 科 38 種。水域生物部分則調查到 7 目 48 種的水棲昆蟲。河川水質指標 FBI 顯示，除志樂溪與大甲溪匯流處水質較差外，其餘河段水質極佳。

關鍵詞：志樂溪、水生生物、生物多樣性、指標生物

## Abstract

This project surveyed mammals, birds, frogs, insects and molluscs of the Chih-Le river watershed of the Sherpa Nature Protected Area. This year focused at the high elevation area and also surveyed the aquatic creatures.

Combining data from 2 years of data, field observations, camera traps, bat detectors, audio recording survey, and Sherman traps documented 29 mammalian species, including 1 endangered protected species Formosan black bear (*Ursus thibetanus formosanus*), 4 rare protected species yellow-throated marten (*Martes flavigula chrysofila*), Chinese pangolin (*Manis pentadactyla pentadactyla*), sambar deer (*Cervus unicolor swinhoei*) and Formosan serow (*Naemohedus swinhoei*), and 4 other protected species Formosan water shrew (*Chimarrogale himalayica*), Formosan macaque (*Macaca cyclopis*), Reeve's muntjac (*Muntiacus reevesi micrurus*), and gem-faced palm civet (*Paguma larvata taiwana*). Larger mammals were mainly mid-to-high altitude species. Ferret badgers (*Melogale moschata subaurantiaca*) were more easily found. Yellow-throated marten's distribution was restricted in the high elevation. Formosan black bears were photographed again this year. Regarding ungulates, muntjacs and serows dominate while sambar deer distributes at higher altitudes in low density. Muntjacs, serows, sambar deer, and wild boars (*Sus scrofa taiwanus*) were active day and night with higher diurnal activities similar to Tawu mountain area. Their occurrence indices (OI) were also similar to Tawu mountain area without human hunting, which implied human disturbances and hunting were not high in the study area. Chinese pangolin was very rare but was found at high elevation of 2900m. Seventy-one bird species were recorded, including 3 endangered protected species Hodgson's hawk eagle (*Spizaetus nipalensis*), Indian black eagle (*Ictinaetus malayensis*) and peregrine falcon (*Falco peregrinus*), 12 rare protected species crested

serpent eagle (*Spilornis cheela*), Mikado pheasant (*Syrnaticus mikado*), Swinhoe's pheasant (*Lophura swinhoii*), Taiwan tit (*Parus holsti*), little forktail (*Enicurus scouleri*), white-backed woodpecker (*Dendrocopos leucotos*), gray-headed green woodpecker (*Picus canus*), collared pigmy owl (*Glaucidium brodiei*), tawny fish owl (*Ketupa flavipes*), Tawny wood owl (*Strix aluco*), spotted scops owl (*Otus spilocephalus*), brown wood owl (*Strix leptogrammica*), and 9 other protected species Taiwan hill partridge (*Arborophila crudigularis*), Taiwan blue magpie (*Urocissa caerulea*), coal tit (*Parus ater*), green-backed tit (*Parus monticolus*), Taiwan firecrest (*Regulus goodfellowi*), Taiwan barwing (*Actinodura morrisoniana*), white-tailed blue robin (*Myomela leucura*), Blue shortwing (*Brachypteryx montana*) and plumbeous water redstart (*Rhyacornis fuliginosus*). Six frog species were found and were mostly low-to-mid altitude common species. The endangered Formosan saladanders (*Hynobius formosanus*) were also found in the high elevation area.

Thirty-six species of insects belonging to 15 families were found on the high-altitude area, most of them are Lepidoptera, others are Coleoptera and Hymenoptera. Combined the 2 years data of insects survey, 22 families, 121 species of Coleoptera, 21 families, 201 species of Lepidoptera and 16 families and 34 species of Trichoptera were found from the Chi-Le River area.

No fish and Crustacea were found from the Chi-Le River, 7 order, 48 species of aquatic invertebrates were found from the upper and downstream of Chi-Le river. The FBI index indicate the water quality of Chi-Le River is excellent or very good, unless the area adjacent th Da-Chia River.

Keywords: Chih-Le river, aquatic creatures, biodiversity, protected species, indicator species