

Gibbon Surveys

Nam Phui National Protected Area and Dong Khanthung Provincial Protected Area



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ບົດສັງລວມຫຍໍ້: ການສຳຫຼວດ ທະນິມີຂາວ ປ່າສະຫງວນແຫ່ງຊາດ ນ້ຳປຸຍ ແຂວງໄຊຍະບູລີ ແລະ ທະນິທຸງໄຊ ປ່າສະຫງວນ ດົງຄັນທຸງ ແຂວງຈຳປາສັກ

ບົດລາຍງານສະບັບນີ້ ໄດ້ລາຍງານຜົນການສຳຫຼວດ ທະນິມີຂາວ ທີ່ປ່າສະຫງວນແຫ່ງຊາດ ນ້ຳປຸຍ ແລະ ທະນິ ທຸງໄຊ ທີ່ປ່າສະຫງວນດົງຄັນທຸງ ແຂວງ ຈຳປາສັກ ພ້ອມທັງ ສະເໜີບາງຄຳສະເໜີແນະເນື້ອງຕົ້ນ ເຖິງຄວາມເປັນໄດ້ ໃນການອະນຸລັກທະນິ ດັ່ງກ່າວ ໃນອະນາຄົດ.

ສປປ ລາວ ມີ ທະນິ 6 ຊະນິດ, ເປັນອັນດັບສອງ ຮອງຈາກປະເທດອິນໂດເນເຊຍ ທາງດ້ານຄວາມຫຼາກຫຼາຍຂອງທະນິ. ໃນປະຈຸບັນ, ຂໍ້ມູນທາງດ້ານທະນິ ຂອງສປປ ລາວ ແມ່ນມີໜ້ອຍຫຼາຍ ແລະ ບໍ່ມີຂໍ້ມູນທີ່ທັນສະໄໝ. ໃນຂະນະທີ່ຮັບຮູ້ວ່າ ທະນິໃນຫຼາຍແຫ່ງທີ່ເຄີຍມີ ແລະ ໄດ້ຍິນສຽງຮ້ອງເລີ່ມໝົດໄປແລ້ວ. ເນື່ອງຈາກບັນຫາໄພຂົ່ມຂູ່ ໄດ້ເຮັດໃຫ້ປະຊາກອນຂອງທະນິ ຫຼຸດລົງຢ່າງຫຼວງຫຼາຍ. ລັດຖະບານລາວ ກໍ່ຄື ອົງການຈັດຕັ້ງສາກົນ ຮັບຮູ້ກ່ຽວການປ່ຽນແປງດັ່ງກ່າວ ແລະ ພວມໃຫ້ຄວາມສົນໃຈຫຼາຍຂຶ້ນ ຕໍ່ການອະນຸລັກທະນິທັງໝົດເຫຼົ່ານີ້ ດ້ວຍການລິເລີ່ມ ພັດທະນາແຜນດຳເນີນງານອະນຸລັກທະນິຂຶ້ນ ສຳລັບ ສປປ ລາວ.

ເພື່ອຮັກສາຄວາມຫຼາກຫຼາຍຂອງທະນິ ໃນ ສປປ ລາວ ກໍ່ຄືການຄຳປະກັນຄວາມຫຼາກຫຼາຍທາງດ້ານຊີວະນາໆພັນຂອງປະເທດ ຈຳເປັນຕ້ອງໄດ້ມີການຮັບປະກັນວ່າ ທະນິເຫຼົ່ານີ້ ໄດ້ຮັບການປົກປັກຮັກສາ. ຕໍ່ບັນຫາດັ່ງກ່າວນັ້ນ, ມັນຈຳເປັນຕ້ອງມີແຜນດຳເນີນງານອະນຸລັກທະນິ ໃນລະດັບຊາດ. ເພື່ອຕອບສະໜອງ ໃນການພັດທະນາແຜນດັ່ງກ່າວ ຈຳເປັນຕ້ອງໄດ້ມີຂໍ້ມູນຂອງທະນິ ໃນປະຈຸບັນ. ໃນນີ້, ຂໍ້ມູນຂອງທະນິ 2 ຊະນິດຄື ທະນິມີຂາວ ແລະ ທະນິ ທຸງໄຊ (ຫຼື ທະນິມົງກຸດ ຕາມພາສາໄທ) ແມ່ນບໍ່ມີຂໍ້ມູນໃໝ່ເລີຍ ແລະ ແຕ່ລະຊະນິດ ໄດ້ມີການລາຍງານ ຢູ່ພຽງເຂດດຽວ. ດັ່ງນັ້ນ, ອົງການ IUCN ແລະ ກອງອະນຸລັກຊັບພະຍາກອນປ່າໄມ້ ຂອງກົມປ່າໄມ້ ຈຶ່ງໄດ້ດຳເນີນການສຳຫຼວດ ໃນສອງພື້ນທີ່ດັ່ງກ່າວ ເພື່ອສະໜອງຂໍ້ມູນ ໃນການພັດທະນາແຜນດຳເນີນງານ ການອະນຸລັກທະນິ ແລະ ເປັນການຢັ້ງຢາມເບິ່ງບາງພື້ນທີ່ຕົວຢ່າງໃນພາກສະໜາມ ເພື່ອສ້າງຄວາມເຂົ້າໃຈ ກ່ຽວກັບໄພຂົ່ມຂູ່ຂອງທະນິ. ໂດຍທົນສະໜັບສະໜູນຫຼັກ ຈາກ ສະຖານທູດ ສະຫະລັດ ອາເມລິກາ ໃນການສຳຫຼວດ ກໍ່ຄືການພັດທະນາແຜນດຳເນີນງານ ດັ່ງກ່າວ.

ການສຳຫຼວດທະນິ ໄດ້ດຳເນີນ ແຕ່ວັນທີ 11 ທາ 31 ເດືອນ ພຶດສະພາ ປີ 2010 ໂດຍມີຜູ້ເຂົ້າຮ່ວມທັງໝົດ 26 ຄົນ ໃນສອງເຂດສຳຫຼວດ. ທັງໆທີ່ການສຳຫຼວດຄັ້ງນີ້ ໃຊ້ເວລາສັ້ນ ແຕ່ມີຜົນປະໂຫຍດຫຼາຍ ແລະ ໄດ້ຮັບຮູ້ຂໍ້ມູນຫຼາຍຢ່າງ ໃນພາກສະໜາມທີ່ໜ້າສົນໃຈ. ນອກຈາກຂໍ້ມູນກ່ຽວກັບ ທະນິແລ້ວ ພວກເຮົາຍັງເຂົ້າໃຈໄດ້ກ່ຽວກັບຂໍ້ມູນສະຖານະພາບຂອງສັດປ່າ, ຖິ່ນອາໄສຂອງສັດປ່າ ແລະ ໄພຂົ່ມຂູ່ຕ່າງໆ ພ້ອມທັງ ທ່າແຮງຄວາມເປັນໄປໄດ້ ໃນການອະນຸລັກພື້ນທີ່ດັ່ງກ່າວ ໂດຍການຖືເອົາທະນິ ເປັນຊະນິດພັນຕົວແທນ ແລະ ແນ່ນອນ ຜົນສຳເລັດໃນການອະນຸລັກນັ້ນ ເປັນຜົນດີກໍ່ການອະນຸລັກສັດປ່າ ປະເພດອື່ນໆ ໃນເມື່ອຖິ່ນອາໄສຂອງມັນຖືກປົກປັກຮັກສາ ແລະ ໄພຂົ່ມຂູ່ຖືກຫຼຸດລົງ.

ໃນປ່າສະຫງວນແຫ່ງຊາດ ນ້ຳປຸຍ ໄດ້ພົບ ແລະ ລາຍງານວ່າ ຍັງມີທະນິມີຂາວ ອາໄສຢູ່ ປະມານ 5 ເຂດ ເຊັ່ນ: ສາຍພູຕົງຕອນໃຕ້, ເຂດພູດຳ/ພູປູ, ຊຸນຫ້ວຍສະເທີນ, ພູເຂົາທອງ ແລະ ເຂດນາແວນ ແຕ່ຊາວບ້ານຄາດວ່າ ຢູ່ໃນແຕ່ລະເຂດດັ່ງກ່າວ ອາດມີພຽງແຕ່ 1 ຫຼື 2 ກຸ່ມ ເທົ່ານັ້ນ. ໂດຍລວມແລ້ວ

ປະຊາກອນຂອງທະນີຊະນິດນີ້ມີໜ້ອຍຫຼາຍ ແລະ ກະຈາຍຢູ່ເປັນຈຸດ ໃນເສັ້ນຂະໜານທີ 18°35'-43' ແລະ ເສັ້ນແວງ ທີ 101°20'-26' ຈາກເຂດພູຕົງຕອນໃຕ້ ທາງທິດຕາເວນອອກ ຂອງ ປ່າສະຫງວນ ຫາພູປູ່ ຈຸດ ໃຈກາງປ່າສະຫງວນ ແລະ ຕໍ່ຫາເຂດຕິດກັບ ຊາຍແດນໄທ. ປະຊາກອນທະນີ ທີ່ມີຢູ່ແມ່ນຕັດແຍກອອກຈາກ ກັນ ເນື່ອງຈາກປ່າບໍ່ຕໍ່ເນື່ອງກັນ ແລະ ຍ້ອນການມີເສັ້ນທາງຜ່ານປ່າສະຫງວນແຕ່ ບ້ານ ນາແວນ ຫາ ເມືອງ ທົ່ງມີໄຊ. ແຕ່ຍັງໂຊກດີໜ້ອຍໜຶ່ງ ທີ່ຍັງມີການລາຍງານວ່າ ທະນີຊະນິດດັ່ງກ່າວ ຢູ່ເຂດນາຕຸງນາຄານ (ປ່າຜະ ລິດພູຜາດຳ) ເຊິ່ງປະຊາກອນນີ້ແມ່ນ ນອນຢູ່ນອກ ເຂດປ່າສະຫງວນແຫ່ງຊາດນ້ຳປຸຍ.

ບັນຫາໄພຂົ່ມຂູ່ຕໍ່ທະນີຊະນິດນີ້ ໃນປ່າສະຫງວນແຫ່ງຊາດນ້ຳປຸຍ ແມ່ນການລ່າ ແລະ ການສູນເສຍ ຖິ່ນທີ່ຢູ່ອາໄສຈາກໄພໃໝ່ປ່າ ອັນເຮັດໃຫ້ອານາເຂດ ແລະ ແຫຼ່ງອາຫານຂອງມັນມີຄວາມຈຳກັດ.

ສຳລັບການສຳຫຼວດ ທະນີທຸງໄຊ ທີ່ປ່າສະຫງວນ ດົງຄັນທຸງ ກໍ່ໄດ້ພົບ ແລະ ລາຍງານວ່າ ປະຊາກອນຂອງທະນີ ຊະນິດນີ້ ອາໄສຢູ່ ປະມານ 7 ເຂດ ເຊັ່ນ: ຫ້ວຍຕະໂລ້, ຫ້ວຍ ປ່າສວນ, ຫ້ວຍເຂັມ, ຫ້ວຍກະດັນ, ຫ້ວຍ ນາງອີງ ຫຼື ຫ້ວຍວຽນ, ຫ້ວຍດ່ານນ້ອຍ ແລະ ຫ້ວຍລວກ (ເຂດ ຕາກັ້ງ). ໂດຍອີງຕາມ ການຄາດຄະເນຂອງຊາບ້ານ ແລ້ວ ໃນແຕ່ລະເຂດອາດມີຮອດສອງກຸ່ມ. ປະຊາກອນຂອງທະນີ ຊະນິດນີ້ ແມ່ນຖືກຕັດແຍກອອກຈາກກັນ ຍ້ອນເສັ້ນທາງຕັດຜ່ານ ແລະ ປະຈຸບັນພວກມັນແບ່ງເປັນອານາເຂດຂອງ ໃຜລາວ ຢູ່ໃນແຕ່ລະເຂດ.

ປ່າສະຫງວນດົງຄັນທຸງ ປະກອບມີຫຼາກຫຼາຍຖິ່ນທີ່ຢູ່ອາໄສ ເຊັ່ນ: ປ່າເຄິ່ງດົງດິບ, ປ່າໂຄກແລ້ງ ແລະ ປະສົມປະສົມ, ປ່າແປກ, ເຂດດິນບໍລິເວນນ້ຳ, ແຕ່ຍັງປະກອບມີປູ່ງ, ບ່ອນແຜ່ພັນປາ ໃນລະດູຝົນ, ເຂດປ່າ ແຄມນ້ຳ, ທົ່ງຫຍ້າ ແລະ ອື່ນໆ. ຄວາມຫຼາກຫຼາຍຂອງຖິ່ນທີ່ຢູ່ອາໄສນີ້ ເຮັດໃຫ້ມີ ຄວາມແທດເໝາະ ກັບຫຼາຍ ຊະນິດພັນສັດປ່າ. ເພາະສະນັ້ນ, ທາງດ້ານນິເວດວິທະຍາແລ້ວ ແມ່ນມີ ສັດປ່າ ຫຼາຍຊະນິດອາໄສຢູ່. ພ້ອມ ນັ້ນ, ປ່າສະຫງວນ ດົງຄັນທຸງຍັງມີຄວາມພົ້ນເດັ່ນ ຂອງປ່າໂຄກ ທີ່ລົມບູນ ແລະ ມີຄຸນນະພາບສູງ ໃນດ້ານ ໂຄງສ້າງຂອງປ່າ ແລະ ການກະຈາຍ.

ປ່າສະຫງວນ ດົງຄັນທຸງ ຖືວ່າໄດ້ຮັບການລົບກວນຫຼາຍສົມຄວນ ໃນທີ່ຜ່ານມາ ແຕ່ກໍຍັງມີການລາຍ ງານ ກ່ຽວກັບບັນດາ ປະຊາກອນຂອງສັດປ່າທີ່ສຳຄັນຫຼາຍຊະນິດ. ໃນການສຳຫຼວດ ໄດ້ມີການຍັ້ງຢືນ ຫຼັກ ຖານ ການພົບເຫັນສັດປ່າ ບາງຊະນິດ ໂດຍສະເພາະ ພວກນົກ ແລະ ສັດໃຫ່ຍຈຳນວນໜຶ່ງ. ປ່າສະຫງວນດົງ ຄັນທຸງ ອາດເປັນພື້ນທີ່ດຽວທີ່ຍັງພົບເຫັນນົກປ່າຫຼາຍຊະນິດ ຈາກການສຳຫຼວດ ຕໍ່ວັນ. ການສຳພາດ ແລະ ການລາຍງານ ເຫັນວ່າ ປ່າສະຫງວນດົງຄັນທຸງ ຍັງມີສັດປ່າທີ່ສຳຄັນ ເຊັ່ນ: ຊ້າງ, ເສືອໂຄ່ງ, ເສືອດາວ, ງົວ ປ່າ, ເມີຍ, ທະນີ, ນົກຂຽນ, ນົກເປັດກ່າ, ນົກສ້ອນຫອຍ, ນົກກາບບົວ?, ນົກຍຸງ, ນົກກະຊຸມ, ນົກຄໍ່າ, ນົກ ຄໍ່າກ່ານ, ນົກກົກ ແລະ ອື່ນໆ.

ບັນຫາໄພຂົ່ມຂູ່ຕໍ່ທະນີທຸງໄຊ ແມ່ນການລ່າ ແລະ ການສູນເສຍ ຖິ່ນທີ່ຢູ່ອາໄສຈາກການຂຸດຄົ້ນໄມ້. ການລ່າ ແມ່ນເພື່ອການເອົາລູກຂອງມັນໄປຂາຍ ແຕ່ການບັງຄັບໃຊ້ທາງກົດໝາຍຕໍ່ການລ່າທະນີແມ່ນເກືອບວ່າ ບໍ່ມີ ທັງໆທີ່ທະນີທຸກຊະນິດ ເປັນສັດທ້າມທ້າມ ເດັດຂາດ ຂອງ ສປປ ລາວ.

ຜົນຂອງການສຳຫຼວດຄັ້ງນີ້ ທາງທຶມງານ ໄດ້ໃຫ້ຄຳສະເໜີແນະທາງດ້ານວິຊາການເບື້ອງຕົ້ນ ເພື່ອ ການອະນຸລັກທະນີ ກໍ່ຄືສັດປ່າທີ່ສຳຄັນອື່ນໆ ໃນຕໍ່ໜ້າ. ຄວາມຈິງແລ້ວ ພື້ນຖານການຈັດສັນຂອງປ່າສະຫງວນ ແຫ່ງຊາດນ້ຳປຸຍ ແມ່ນຢູ່ໃນລະດັບດີ ໂດຍມີສິ່ງອຳນວຍຄວາມສະດວກ ພ້ອມທັງມີພະນັກງານໃນຈຳນວນທີ່ເໝາະ

າະສົມ ຖ້າທຽບໃສ່ຫຼາຍໆປ່າສະຫງວນແຫ່ງຊາດ ໃນ ສປປ ລາວ. ການທີ່ຈະອະນຸລັກທະນິມີຂາວ ທີ່ປ່າສະຫງວນແຫ່ງຊາດ ນ້ຳປຸຍ ມັນຈຳເປັນຕ້ອງໄດ້ຮັບດ່ວນໃນການປູກຈິດສຳນຶກ ກ່ຽວກັບສະຖານະພາບ ແລະ ຄວາມສຳຄັນຂອງທະນິຊະນິດດັ່ງກ່າວ ຢູ່ຕາມເຂດແຄ້ມທະຫານ ແລະ ຊາວບ້ານທີ່ອາໄສຢູ່ອ້ອມຂ້າງປ່າສະຫງວນ. ພ້ອມກັນນັ້ນ, ຈຳເປັນຕ້ອງໄດ້ມີການເກືອດທຳມະການລ່າທະນິຊະນິດນີ້ ຢ່າງຖາວອນ ລວມທັງສັດຊະນິດທີ່ສຳຄັນຕ່າງໆ ໃນເຂດປ່າສະຫງວນ, ເພີ່ມຄ່າການປັບໃໝ, ພື້ນຟູ ຄຸນນະພາບຖິ່ນທີ່ຢູ່ອາໄສ ເພື່ອຕອບສະໜອງແຫຼ່ງອາຫານໃຫ້ພວກມັນ. ພ້ອມທັງຈຳເປັນຕ້ອງມີການກຳນົດເຂດຫວງທຳມະ, ການສຶກສາປະຊາກອນຂອງມັນ ໃຫ້ລະອຽດ ໃນອະນາຄົດ. ຄວນມີການມອບໝາຍໃຫ້ຊາວບ້ານ ທີ່ເຂດບ້ານໃດຍັງມີທະນິຢູ່ ມາຊ່ວຍໃນການຕິດຕາມທະນິ ໃນແຕ່ລະໄລຍະ. ບັນຫາໄຟປ່າ ແມ່ນເປັນບັນຫາໃຫ່ຍ ແລະ ຄວນມີການປ້ອງກັນດ້ວຍການໂຄສະນາ ທຸກໆປີກ່ອນລະດູການໄຟປ່າ (ເດືອນ 3-4 ສາກົນ) ແລະ ມອບສິດອຳນາດໃຫ້ແຕ່ລະບ້ານເປັນຜູ້ປົກປັກຮັກສາ ແລະ ເຝົ້າລະວັງ ໃນຂອບເຂດຮັບຜິດຊອບຂອງບ້ານຕົນ.

ໃນຂະນະທີ່ ປ່າສະຫງວນດົງຄັນທຸງ ແມ່ນຍັງບໍ່ໄດ້ມີການລິເລີ່ມວຽກງານການອະນຸລັກໃດໆ ແລະ ຈະຕ້ອງໄດ້ລິເລີ່ມໃໝ່ ໃນຮູບແບບຊຸມຊົນເປັນເຈົ້າການ. ປ່າສະຫງວນແຫ່ງນີ້ ຍັງມີທ່າແຮງທີ່ດີ ໃນການປົກປັກຮັກສາ ເພື່ອການອະນຸລັກ ສັດລ້ຽງລູກດ້ວຍນົມ, ນົກນ້ຳ, ນົກປ່າທີ່ສຳຄັນຫຼາຍຊະນິດ. ປ່າສະຫງວນດົງຄັນທຸງ ແມ່ນມີຄວາມສຳຄັນຫຼາຍ ໃນການກຳນົດໃຫ້ເປັນເຂດອະນຸລັກທີ່ສຳຄັນ ອັນເປັນທີ່ຮັບຮູ້ ໃນລະດັບຊາດ ຫຼື ສາກົນ. ການອະນຸລັກປ່າໄມ້ ແລະ ສັດປ່າ ໃນເຂດດັ່ງກ່າວຂອງ ສປປ ລາວ ເປັນຜົນດີຕໍ່ການອະນຸລັກ ໃນລະດັບຂົງເຂດ. ໃນແນວຄວາມຄິດ ທາງວິຊາການແລ້ວ ພື້ນທີ່ ດົງຄັນທຸງ ອາດມີຄວາມເໝາະສົມ ເປັນເຂດອະນຸລັກພັນສັດປ່າແຫ່ງຊາດໄດ້. ການອອກແບບ ເພື່ອສ້າງພື້ນທີ່ອະນຸລັກ ຈຳເປັນຕ້ອງມີການກຳນົດໃຫ້ມີເຂດປ່າເຊື່ອມຕໍ່ ໃຫ້ຕິດຈອດກັນໝົດ ໃນ 6 ເຂດເຫຼົ່ານີ້. ໃນການກະກຽມເພື່ອສະເໜີເອົາເຂດດັ່ງກ່າວ ເປັນເຂດອະນຸລັກນັ້ນ ອາດໃຊ້ເວລາ ແຕ່ໃນປະຈຸບັນ ທາງກອງຄຸ້ມຄອງປ່າສະຫງວນ ປະຈຸບັນແຂວງ ຈຳປາສັກ ກໍ່ຄື ພະແນກ ກະສິກຳ ແລະ ປ່າໄມ້ແຂວງ ຄວນມີການແຈ້ງການ ໃຫ້ອຳນາດການປົກຄອງທ້ອງຖິ່ນ ໃນການເອົາໃຈໃສ່ຕໍ່ການອະນຸລັກທະນິ ທຸງໄຊ ກໍ່ຄືສັດປ່າ ທີ່ຫວງທຳມະ ໃນເຂດປ່າສະຫງວນດົງຄັນທຸງ ເປັນອັນສະເພາະ. ພ້ອມທັງ, ແນະນຳໃຫ້ແຕ່ລະກຸ່ມບ້ານ ພັດທະນາ ເອົາວຽກງານການປູກຈິດສຳນຶກ ກ່ຽວກັບສະຖານະພາບ ແລະ ຄວາມສຳຄັນຂອງທະນິຊະນິດດັ່ງກ່າວ ເສີມເຂົ້າໃນວຽກງານພັດທະນາກໍ່ຄືວຽກງານການປ້ອງກັນຊາດ ຢູ່ຕາມເຂດແຄ້ມທະຫານ ແລະ ຊາວບ້ານທີ່ອາໄສຢູ່ອ້ອມຂ້າງປ່າສະຫງວນ.

Executive Summary

This report presents the key findings from trips to the Nam Phui National Protected Area (NPA) for surveys of White-handed Gibbon (*Hylobates lar*) and to Dong Khanthung Provincial Protected Area (PPA) for surveys of Pileated Gibbon (*Hylobates pileatus*). In addition, it provides some initial recommendations for the conservation of these gibbon species in the future.

Lao PDR has six gibbon species, second to only Indonesia in terms of the number of gibbon species inhabiting the country. Little is known regarding the status of gibbon species in the country and there is a lack of available, up-to-date information. However, it is recognized that in many places where gibbons used to be present, gibbon songs are now gone. Because gibbons can be so easily identified by their melodious singing, instead of the unmelodious calls of other primates, the absence of gibbon song in the forest is a reliable indicator that gibbons have left the area. Because of various threats, gibbons are experiencing a rapid decline in their population. A growing momentum and mutual interest on the part of the Government of Lao PDR (GoL) and international organizations, who are aware of the changes, has led to greater efforts to conserve this species by developing a national gibbon action plan for Lao PDR.

In order to maintain the diversity of gibbons in the Lao PDR as well as the country's biodiversity values, we need to ensure all the gibbon species are well protected and to have a national action plan on gibbon species conservation. To support the development of the plan it is also necessary to obtain current data on the country's various gibbon species. Two of the gibbon species, White-handed Gibbon and Pileated Gibbon lack up-to-date information and have only been reported in a single site each. Therefore, IUCN, International Union for Conservation of Nature, Lao PDR Office, and the Division of Forest Resources Conservation (DFRC) of the Lao Department of Forestry, conducted two field surveys to gather this information and undertook some understanding of field conditions especially the gibbon threats from these two sites as example. The surveys were carried out as part of the United States Embassy supported project to this survey as well as developing the national gibbon conservation action plan.

The surveys were conducted during the 11th through 31st of May 2010 in both sites and 26 people were involved in the two survey areas. Although both surveys were relatively short, both trips were very useful and yielded interesting findings. In addition to the gibbon survey work, the surveyors gained an understanding of the current status of these sites in terms of wildlife communities, wildlife habitats and threats, as well as potentials for site-based conservation. Gibbons can be considered a flagship species, so success in protecting their habitats and reducing threats to them can certainly benefit the conservation of other wildlife and wildlife habitats.

There are five main sites in Nam Phui NPA where the presence of White-handed Gibbons has been reported. These are in the southern portion at Phou Tong, Phou Dam/Phou Pu, Houy Saheun watershed, Phou Khaothong and Navene, but only one or two groups per site were estimated by local villagers. Overall, the population of this species is very low; it is distributed in a scattered fashion between latitude 18°35'-43' and longitude 101°20'-26', from the southern Phou Tong on the eastern side of the NPA to the core area at Phou Pu and on the west at the border with Thailand. The population of this gibbon species is fragmented due to deforestation and being bisected by a road that connects Ban Navene to Thongmixay District. Fortunately, another small population of White-handed Gibbons has been reported outside the NPA, at Na Tong Nam Khan.

Threats to the gibbon population in Nam Phui NPA are hunting and habitat loss from forest fires, which makes habitat ranges smaller and limits the availability of food sources.

For Pileated gibbon, there are at least seven main sites in the Dong Khanthung region where gibbon presence has been confirmed, including Houy Talo, Houy Pasuan, Houy Khem, Houy Kadan, Houy Nang Ing, Houy Dannoï and Houy Laok (Takang sector). Based on the estimation of local villagers there are about two groups per site. The population of this gibbon is also fragmented by roads and now they each have each own range by sectors.

Dong Khanthung presents various wildlife habitats, such as lowland/semi-evergreen forest, dry dipterocarp/mixed dipterocarp forest, pine forest and wetlands. There are still a number of salt-licks, a large area of fish breeding grounds during the wet season, a riverine system, grasslands and so on. These different wildlife habitats make it suitable for many wildlife species; therefore, ecologically there will be many wildlife species present. In addition, Dong Khanthung hosts some of the highest quality dipterocarp forests in Lao PDR due to its forest structures and patterns of distribution.

Despite the fact that Dong Khanthung is considerably degraded, many key wildlife species have still been reported there. Wildlife and evidence of wildlife have been found, especially large birds and forest birds in general. It may be only the area in Lao PDR with good opportunities to detect many forest birds in a single day trip. Based on the information gained from local interviews and current observations, the key wildlife species still living in the area include the Asian elephant, tiger, leopard, banteng, gaur, gibbon, sarus crane, white-winged duck, black ibis, white-shouldered ibis?, green peafowl, adjutant, stork, oriental darter, and great hornbill. However, hunting and habitat loss due to logging are the main threats to Pileated Gibbons in the area.. Hunters catch infant gibbons so that they can sell them. Law enforcement for tackling gibbon hunting is completely lacking, even though this species is categorized as a protected species of Lao PDR making hunting and trading gibbons illegal.

This report uses information from the surveys to provide some initial recommendations for the conservation of these gibbons as well as other key wildlife species in the future. Nam Phui NPA has good basic facilities as well as a sufficient number of staff in place; it is better equipped compared to many other NPAs in the country. In order to conserve the White-handed Gibbons in Nam Phui NPA urgent action is required for conservation awareness raising regarding its status and its conservation significance, both in army camps and adjacent local communities. This public education should be carried out alongside enforcement of the ban on hunting gibbons and other key species, increased penalty fees, and efforts made to improve habitat quality in order to increase food sources. A detailed population study in the long-run through further research is also recommended. As a security measure some villagers should be assigned to monitor from time to time the areas where gibbons live. The area should be zoned according to where high biodiversity levels occur and sites that gibbons inhabit should be classified as totally protected zones. Forest fires are the main problem that needs to be prevented as much as possible by organizing a fire prevention campaign each year before the forest fire season starts (March to April). Education campaigns should urge each village to take the responsibility to prevent and watch out for forest fires within their administrative boundaries.

No conservation interventions have taken place in the Dong Khanthung PPA before but they should be started through a community-based approach. As a whole, Dong Khanthung still offers a good chance for the protection and conservation of many important large mammals and water

birds, as well as forest birds. It is highly important that the area is established as a conservation area with national and international recognition. The conservation of forests and wildlife communities in this area of Lao PDR can also benefit conservation values in the region. Ideally, the area is best suited to be labeled a National Wildlife Sanctuary. Designing it as a conservation area will require having corridor zones connecting all six sectors identified in Dong Khanthung. However, preparations for proposing it to be a conservation area will take time; in the meantime the Protected Area Management Division of Champasak as well as the Provincial Agriculture and Forestry Office should inform local authorities about the specific conservation needs of gibbons as well as other key protected wildlife species in Dong Khanthung. Also, the local Kumban should incorporate conservation awareness-raising work on the status and conservation significance of the species into their development agenda, as should national defense agencies when operating at army camps and Dong Khanthung villages.

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Acronyms

BCP	Biodiversity Conservation Project
DAFO	District Agriculture and Forestry Office
DFRC	Division of Forest Resources Conservation
FFI	Fauna & Flora International
IUCN	International Union for Conservation of Nature
LLS	Livelihoods and Landscape Strategy Project
NBCA	National Biodiversity Conservation Area
NPA	National Protected Area
PAFO	Provincial Agriculture and Forestry Office
PPA	Provincial Protected Area
US	United States
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature

¹ LLS = The Livelihoods and Landscape Strategy Project based in Champasak is one of IUCN's projects working on strengthening local community management of forest products and wetlands.

1 Introduction

This report provides the summary of key findings from trips to the Nam Phui NPA² for surveys of White-handed Gibbon (*Hylobates lar*) and to Dong Khanthung PPA³ for surveys of Pileated Gibbon (*Hylobates pileatus*). It also provides some initial recommendations for the conservation of these gibbon species in the future.

Lao PDR has six gibbon species (Figure 1), second only to Indonesia in terms of the high number of gibbon species found in the country (Duckworth 2008). However, little is known about the status of gibbon species in the country. Gibbons are considered an indicator species for biodiversity value—the presence of gibbons in an area indicates that there are still healthy forests and good biodiversity in that area. As the gibbon population becomes low in Lao PDR, there are few villages from which we can hear the gibbons' songs. Because gibbons can be so easily identified by their melodious singing, instead of the unmelodious calls of other primates, the absence of gibbon song in the forest is a reliable indicator that gibbons have left the area. Due to the unsustainable use of wildlife and pressures from human population growth, wildlife market demands and socio-economic development activities, the biodiversity levels of the country have been declining, and more rapidly so in recent years. Because of the threats that gibbons have been exposed to, they are now a species of concern, whose population is experiencing a rapid decline. Growing momentum and mutual interest on the part of the Government of Lao PDR (GoL) and international organizations, who are aware of the trend, has led to greater efforts to conserve this species by developing a national gibbon action plan for Lao PDR.

In order to maintain the diversity of gibbons in the Lao PDR, there is a need to ensure that all the gibbon species are well protected and to have a national action plan on gibbon species conservation⁴. To support the development of the plan it is also necessary to obtain current data on the country's gibbon species. Two of the gibbon species, White-handed Gibbon and Pileated Gibbon, about whom up-to-date information is lacking, are reported only in a single site each. These two species risk becoming extinct in Lao PDR if no interventions occur. Therefore, field checks to determine the current status of these species were a priority to support the development of the gibbon action plan for Lao PDR.

2. Survey Methods

The surveys were conducted during 11-18 May 2010 in Nam Phui NPA, Sayabouli Province, and 23-31 May 2010 in Dong Khanthung (DKT), Champasak Province. Before the surveys were undertaken, the surveyors anticipated that this season was not the optimum time to do

² NPA = National Protected Area, which is the same as National Biodiversity Conservation Area (NBCA) in accordance with its legal status. NPA is used popularly among the conservation community and the general public while NBCA is recognized only in Lao PDR and is a legal and technical term.

³ PPA = Provincial Protected Area.

⁴ The National Action Plan for Gibbon Conservation project is funded by the US Embassy in Lao PDR, Fauna & Flora International (FFI) and the in-kind contribution of IUCN, International Union for Conservation of Nature, Lao PDR.

gibbon surveys by relying largely on their songs. The season that gibbons make good active songs are between November and March “the cold time period in Laos” which would be the time that they make attractive songs to one another for mating. However, due to time constraints, it was decided that the surveys be conducted anyway. The surveyors still expected to ascertain the basic current status of these two species and their main threats.

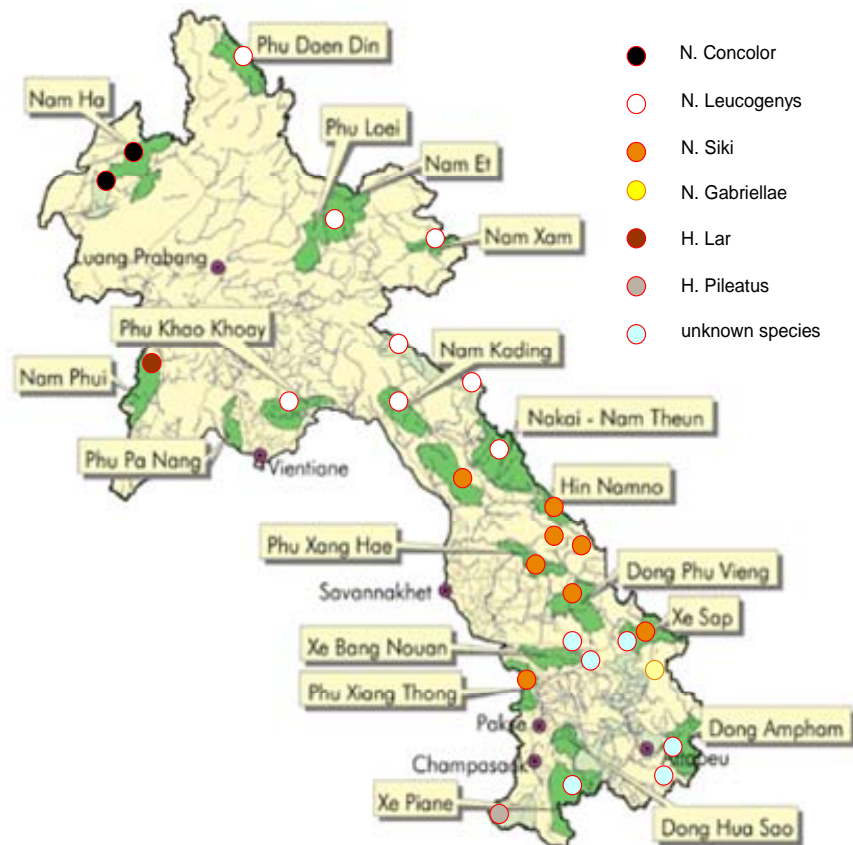


Figure 1. Map of NPAs and Gibbon distribution in Lao PDR

The surveys began with interviews of officials/local authorities and villagers regarding knowledge about gibbons, other key species (especially in DKT), threats and future conservation needs. During the interviews, the surveyors carefully assessed the information and did cross-checks with other sources. Village interviews were conducted with local officials informally, local hunters and villagers in order to verify the presence of the key species in the area. The key reference materials used to design the survey areas include the reports of IUCN (Boonratana, 1998; Berkmuller and Vannalath, 1996) and Wildlife Conservation Society (Round, 1998). For Dong Khanthung, apart from the gibbon survey, the surveyors also collected information on the status of other key wildlife species.

During discussion sessions, the surveyors selected key hunters in the target villages to interview regarding the perception of gibbon distribution in their village area. In the interviews, especially in Dong Khanthung, the interviewees were interested in gaining knowledge about whether some key wildlife species that were reported in the past were still present (Berkmuller and Vannalath, 1996; Round, 1998). Pictures of wildlife were used in village discussions in order to help to identify the species and to help plan the field survey for locations where gibbons may be heard. The survey team was divided into two sub-teams for different sectors (Figure 6).

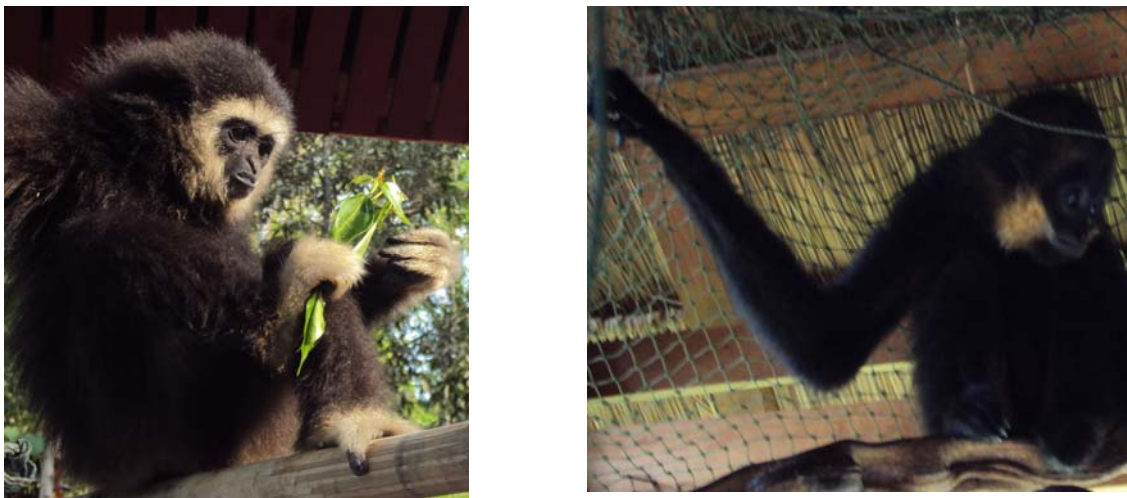


Figure 2. Photo of juvenile male White-handed Gibbon taken at Nam Phui NPA Office (left), Juvenile male Pileated Gibbon? at Ban Mai, Moun District, DKT (right)

For the field surveys, gibbons were mostly identified by their songs, while other large mammals were identified by tracks and other evidence including dung, feeding sites, etc. For birds, we identified them partially by sight and partially from their footprints in ponds and riverbanks.

Participants

There were 26 people involved in the surveys in these two sites (Figure 3 - 5): 1 from IUCN, 1 from the national DFRC/Department of Forestry; and 10 and 14 people from the participating provinces, districts, army camps and villages for Nam Phui NPA and DKT, respectively. The officials from Nam Phui in Sayabouli Province included Mr Somsouy, Keomaniphone, Phutsaba and Thongkhoun. For DKT in Champasak officials included Mr. Mixay Nilandon, Khoui Southammavong, Southchai Moonthivong and Budsaba. Many villagers and district army representatives also participated in the surveys in these provinces.

Their participation is considered important, as during the trips they gained information about the gibbons' status from the survey teams. It encouraged the army people and villagers to

help protect the species from further population decline. They were interested to see the conservation project and gibbon conservation at work in their own provinces and they wanted to join in these efforts.



Figure 3. Gibbon survey team in Dong Khanthung, in front of *Sala loamchai* or Friendship Meeting Point at Lao-Thai-Cambodia border.



Figure 4. Nam Phui NPA staff reading map to check the survey routes, at Nam Lop survey camp, Mr. Somsouy and Keomaniphone.



Figure 5. Gibbon survey team in Dong Khanthung, discussing the survey plan and transect walks from Ban Peao to Ban Thahin. Below is another team going to Nang Ing sector. Tractors were used when a car could not access the deeper forest.



3. Key findings

Although both surveys were relatively short, both trips were very useful and yielded interesting findings. In addition to the gibbon survey work, the surveyors gained an understanding of the current status of these sites in terms of wildlife communities, wildlife habitats and threats, as well as potentials for site-based conservation. Gibbons can be considered a flagship species, and success in protecting their habitats and reducing their threats can certainly benefit the conservation of other wildlife and wildlife habitats. Detailed findings for each site are presented below.

3.1. Surveys of White-handed Gibbon in Nam Phui NPA

Nam Phui National Protected Area is one of Lao PDR's largest NPAs (1,912 km², the attitude averages 500 m above sea level), and is a single area located on the west bank of the Mekong. It lies in 3 districts of Sayabouli Province: Muang Phiang, Thong Mixay and Paklay. There are a total of 41 villages in and around the NPA. The area is covered with mixed deciduous and dry evergreen forests (Figure 6). Forest fire is a major threat in the area, after hunting. Nam Phui NPA is home to a good-sized population of Asian elephants. It includes the area where the last rhino in the area was reportedly killed in 2004, and is only the place in Lao PDR with a population of White-handed Gibbons. However, the information on this species is out of date – officially, nothing post-dates 1998 (Boonratana, 1998). Therefore, it is important to gain updated information on this species. Apart from its uniqueness, the area still has native teak forests, many important hardwood species, and other large animals including a medium-sized mammal such as langurs.



Figure 6. Landscape of Nam Phui National Protected Area, at Phou Pu area



Figure 7. Camping at Houy Hoy, Nam Phui National Protected Area

3.1.1 Management Status of Nam Phui NPA

The status of site management is good compared to the situation in many NPAs in Lao PDR, as the Nam Phui has good basic infrastructure (e.g. office building, large meeting room, 2 dorms) and the number of staff is fairly adequate (17 staff, including a government liaison staff). The construction of the meeting room and dorms was funded by the Provincial Agriculture and Forestry Office (Figure 8). The meeting room can hold 70 participants. The NPA also has some office and field equipment in place.

The NPA staff are working quite actively and continuously on patrolling, inspecting and investigating poachers and illegal loggers. For example, those hunting gibbon have been fined 4 million kip; a number of chainsaws and timber have also been confiscated. However, due to insufficient budget, there is a lack of conservation awareness raising activities, zoning management and other activities to ensure better support of the site's management. Assistance from the WWF⁵ Elephant Conservation Project is helping to improve staff capacity and monitoring systems in the area and is partly supporting NPA activities.

At the village level, the NPA has contact villages that informally report any illegal activities happening in the area. This is a good initiative also for building up a network on gibbon conservation at the grassroots level.

⁵ WWF = World Wide Fund for Nature. It has an elephant monitoring project for a two-year project with budget of USD 50,000 working on strengthening the staff capacity in elephant surveys and monitoring.



Figure 8. Meeting room and dorms of Nam Phui National Protected Area, funded by the Provincial Agriculture and Forestry Office.

3.1.2 Current Records of White-handed Gibbons in Nam Phui NPA

White-handed Gibbons in Nam Phui NPA are distributed in a scattered fashion between latitude 18°35'-43' and longitude 101°20'-26' from the southern Phou Tong on the east of the NPA to the core area at Phou Pu, and in the west at the border with Thailand. Overall, the population of this species is very low and fragmented due to deforestation and bisection by a road cutting through from Ban Naven to Thongmixay District. There are five main areas with reports (partly certified) of their songs being heard, including the southern Phou Tong (18°37'30'' N/101°26'53'' E), Phou Dam (18°38'02'' N/101°21'47'' E), Phou Pu (18°38'25'' N/101°20'51'' E), Houy Saheun watershed, Phou Khaothong and Navene. There is still uncertainty regarding the groups reported in the Navene area, as they were reported in the upper Houy Keo and other sites close to the Lao-Thai border (Figure 9).

It is believed that there are only one or two groups per site. The surveyors heard their songs only once during the survey at Phou Pu. From the survey, it is perceived that the population of this species in this area is very low. Apart from sites in the Nam Phui NPA, the species was also reported in Na Toung Na Khan – just to the east of the NPA, along the Mekong River. This is another population of this gibbon that should be surveyed and conserved in the future.

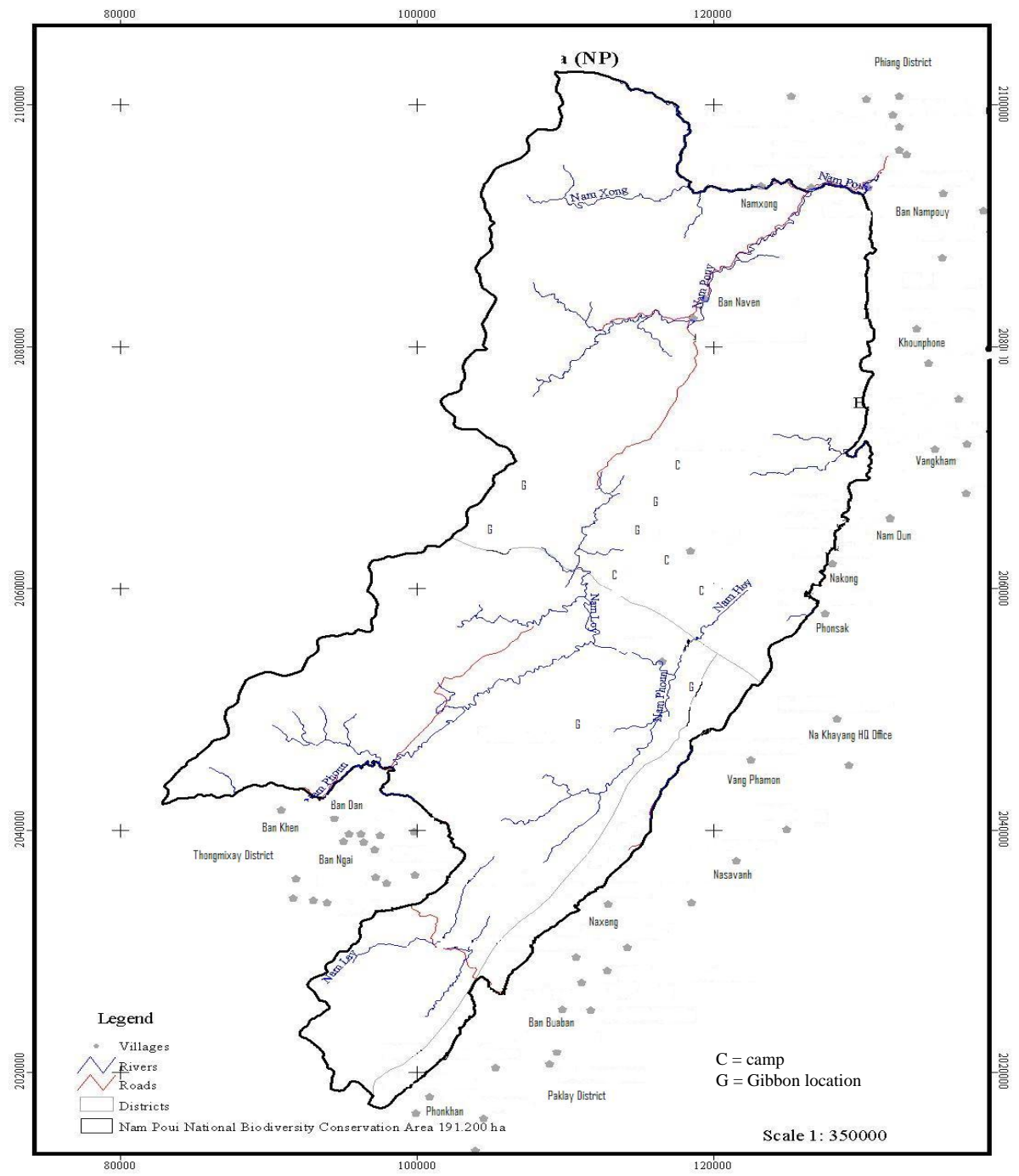


Figure 9. Map of White-handed Gibbon Distribution in Nam Phui National Protected Area



3.1.3 Threats of Nam Phui NPA

Forest fires and human disturbances from hunting are the main threats to Nam Phui NPA. The newly built road crossing the NPA from Ban Navene to Thong Mixay has resulted in increased wildlife hunting in the area from both ends of the road. Long periods of continuing forest fire from year to year have resulted in habitat loss (Figure 10). The forest in the northern Nam Phui area has become degraded and even gives the appearance of bare land in places, except the Phou Pu and Phou Dam areas where population of gibbons is still reported. Hunting for food and sale is also reported and there is a lack of education and awareness activities to remedy these threats. Hunting gibbon infants for pets is also reported. For example, one juvenile male of White-handed Gibbon was found at the Nam Phui NPA Office, having been confiscated from a local hunter the year before. Based on the reports, in the last five years, gibbons' songs were heard in the upper Nam Phou Noy of Thongmixay area and north-eastern part belong to Phieng District but have not been heard in recent years in these areas. This is an indication that the population of the species is in serious decline.

Nam Phui NPA is the only place in Lao PDR where White-handed Gibbons have been officially reported. Therefore, if there is no intervention to address the situation, the White-handed Gibbon may be extinct in Lao PDR in the next two decades.



Figure 10. Degradation forests, Nam Phui National Protected Area

3.1.4 Other Interesting Findings from the Survey in Nam Phui NPA

Where the surveyors camped and walked in the northern and north-western portions of Nam Phui NPA, they found evidence of two other key wildlife species: gaur and bear. They saw the tracks of medium-sized cats and feeding sites of monkeys but not many birds were observed. Nam Phui NPA is well known for having a good population of wild elephants; unfortunately only one piece of evidence was observed, a dung pile. This is most likely because most of the wild elephant population lives in the south and south-western parts of the NPA. Gaur (*Bos frontalis*), tiger (*Panthera tigris*) and other key wildlife species are believed to also be present in the area.

In addition, there are some interesting reports of langurs and a Tong Luang “Yellow Leaves” ethnic group from the trip. A few species of langurs are reported in the area, but it remains unclear which species are being referred to until they can be directly observed. Based on the descriptions given by villagers, these could include Phayre’s Langur (*Trachypithecus phayrei*), Leaf Langur (*Trachypithecus germaini*) and Black Langur (*Trachypithecus ebenus?*). Phayre’s Langur are reported in the area close to the Thai border and Leaf Langur are reported in the Phou Pu and Phou Khaothong areas. The presence of the Leaf Langur and Black Langur west of the Mekong is unusual for the distribution of these primate species. The report of Black Langur is new to this area and needs to be confirmed.

A group of Tong Luang⁶ was met in the core area of the NPA at Houy Hoy. This group is not classified into any category of Lao ethnic groups. They live in forest, eating wild roots, wild vegetables, crabs and fish. No hunting tools are used and therefore they have no opportunity to hunt even wild pigs. They look positively on conservation, as they dislike it when outsiders come to disturb and hunt in their area. They can communicate in Lao to some understandable level, so they could be a key reporter for the NPA on poachers if any commitment is made with them.

⁶The Tong Luang group, or Khao Pa Tong Luang in their full name, Khao Pa means “access to forest” and Tong Luang means “yellow leaves”. They use large leaves to make their camps and move to another place when the leaves become yellow – meaning they stay in the one place for a week and as food sources become scarce so they have to move on to settle in other places. This group has only 21 people with two communities in Nam Phui NPA, and the population has decreased from the previous figure (28 people in 2000). They have no children now, due to lack of choice for marriage - they are all relatives now. However, some couples also did disobey the taboo– so marriage with their own relatives is reported. High mortality in child birth is also reported. Probably they also have low immunization and lack warm clothes. They are now living in a larger group than before, and started growing rice and corn in a small plot at Houy Hoy this year. They told us they were advised by Lao villagers in Ban Nakong, since rice is another choice after wild roots, and they often exchange forest products, e.g., rattan shoots, .. However, walking from their place to the nearest Lao villages takes almost two days. Once they were assisted by an aid project to relocate them close to Lao communities and provided with newly constructed houses, clothes and household items, but they disliked this new life and moved back to the forest after a few days. They said it was too hot to stay in such constructed houses. The change to their culture and involvement of outsiders is not what they prefer (Figure 11).



Figure 11. Tong Luang in Nam Phui NPA, Mr.'s Tem and Hamnoy with their basic sleeping place.

3.1.5 Recommendations for Nam Phui NPA

In order to conserve the gibbon species urgent action on conservation awareness raising is required at army camps and adjacent local communities, alongside a ban on hunting gibbons and other key species, increased penalty fees, and efforts to improve habitat quality to increase food sources for wildlife. A more detailed population study in the long-run is also recommended, as well as assigning some villagers in areas where gibbons are reported to monitor them from time to time. The area should be zoned according to where high biodiversity occurs and sites that gibbons inhabit should be classified as totally protected zones (Figure 12). Forest fires should be prevented as much as possible by holding a campaign yearly before the forest fire season starts (March to April) and authorizing each village to help protect the forest from fire within their administrative boundaries.

Further investigation for White-handed Gibbons in the Na Toung Na Khan area is also needed to understand the current status of this second population of the species. Na Toung Na Khan is now classified as Phou Phadam production forest by Sayabouli Province; however, before it is too late the area can also be zoned to ensure the gibbon is protected. Also, it is necessary to make sure that loggers are not involved in hunting at the same time. Most important of all, logging, even selective, should not take place in the NPA and in particular in zones with high biodiversity, which are the likely habitats and feeding ground for gibbons.

Tong Luang who live in the forest and in the core area could be “eyes and ears” for the Nam Phui NPA. They could be given incentives for supplying up-to-date information about gibbon populations and reporting people who violate NPA laws. Mae Koung at Ban Nakong is the contact person for liaising with the Tong Luang.

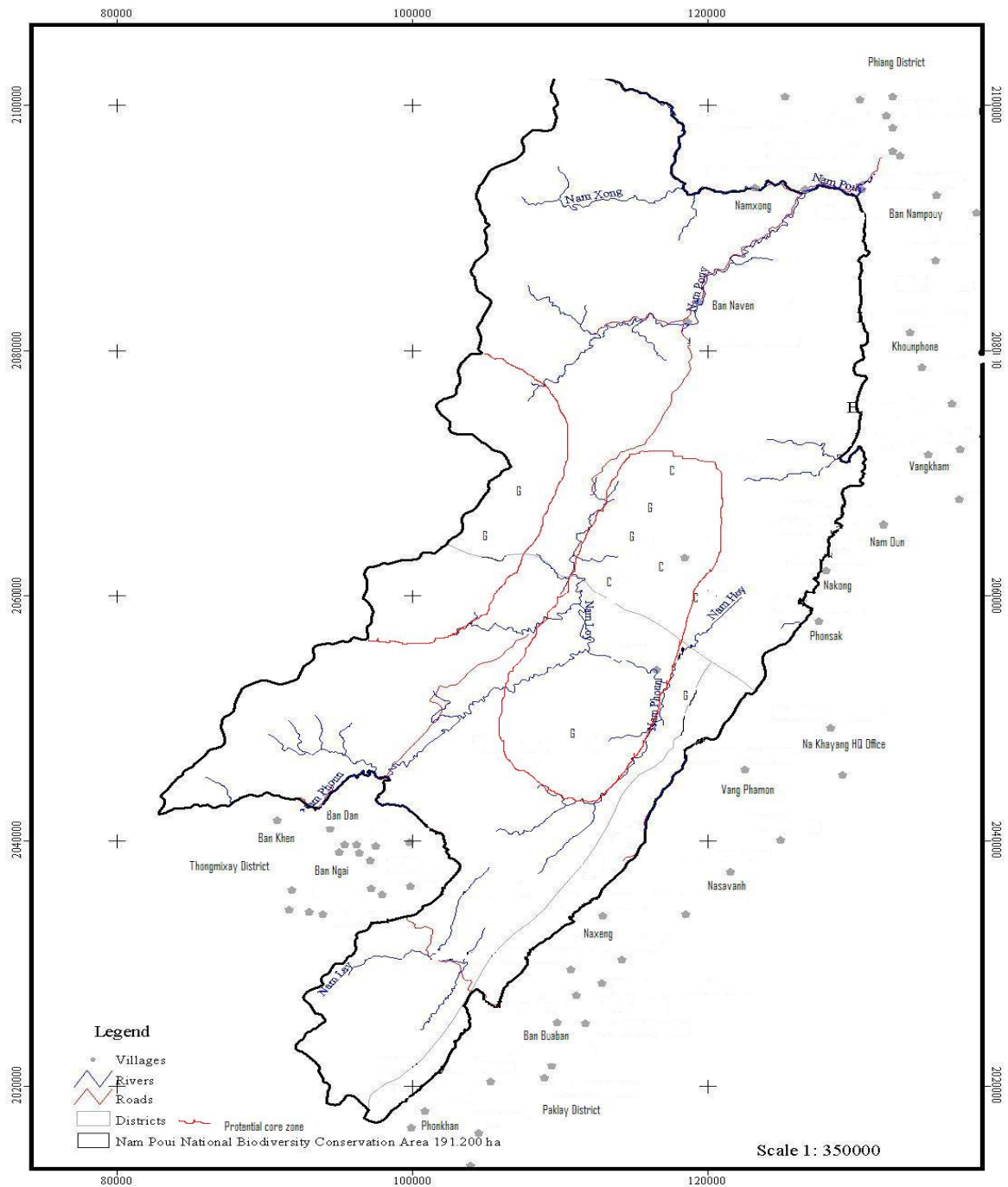


Figure 12. Map of potential core zone area of Nam Phui National Protected Area

3.2. Surveys of Pileated Gibbons in Dong Khanthung PPA

DKT is located in Mounlapamok District and its forest range lies partly in Sukhoumma District, Champasak Province. It is located west of the Mekong River, which shares a border with Cambodia to the south (Preah Vihear Protected Forest) and Thailand to the west (Phou Chong Na Yoy National Park). It is a good-quality forest landscape, with an area of 1,400 km². The area was proposed as a National Biodiversity Conservation Area in 1996 (Figure 13). Its attitude averages 100m above sea level (ranges 75 - 250m asl). There are about 15 villages located in and around the area; 8 villages are considered the core villages. People in this area are of the Khmer ethnic groups, and rely basically on paddy field cultivation.

The Xe Lamphao is the main river that marks the boundary with Cambodia.,The main area is a flat plain of complex dipterocarp forests but with mountains rising up along Xe Lamphao, starting from Houy Khem along the border with Thailand. This highland area is considered a landmark and has now being designated as a provincial protection forest.



Figure 13. Dong Khanthung landscape, photo taken from the triangle of the Lao-Thai-Cambodia border, Mounlapamok, Champasak Province. On the right side is Cambodia.

For the trip to DKT, the surveyors were interested in understanding the whole site. Therefore, the area was divided into sections based on the previous reports of Berkmuller and Vannalath (1996) and Round (1998), to check the presence of wildlife records and reports.

3.2.1 Management Status of Dong Khanthung PPA

DKT was proposed as a National Biodiversity Conservation Area in 1996, due to its very high biodiversity values and significance for conservation – an area (200 km²) of it was also prepared to be a Wildlife Sanctuary in 1998. The IUCN Biodiversity Conservation Project

(BCP⁷) started some consultations with local villagers and made some arrangements for site management during that time but finally failed in implementation, as the BCP project ended suddenly. Since many NBCAs had been established already, DKT was listed as a Provincial Protected Area (PPA). Since then, no funding to support the area has been allocated and the area has been highly disturbed. So far, the area's conservation status and efforts by the local authorities have been quite good for protecting a number of large mammals, but less effective for certain mammals, e.g. gibbons and large birds.

DKT, in accordance with the proposed NBCA, is a large area. However, the area is divided according to different purposes including being national protection forest and provincial production forests. The national protection forest lies in the southern and western parts (the sectors of Ban Khem and Nang Ing) where it is controlled and managed by the army because it is on the frontier boundaries with neighboring countries. The eastern part of DKT is now recognized as provincial production forest (north of the Takang sector, Kadien and partly the north of Pasuan sector). For the areas in between, including Pasuan, it remains unclear to the local authorities if it is still part of the provincial protected area.

Although no particular conservation interventions in place, some villages use natural resources in a sustainable way; they collect them only for household consumption needs with not much interest in harvesting their forest resources for sale. Therefore, some wild animals are found close to their village areas, such as Ban Thahin, Ban Po, Ban Paeo and Ban Khem. Especially Ban Thahin, sambars, rabbits' tracks, and civets' dungs found close to the village and many bird species were observed in morning. This kind of evidences is interesting and the villagers should get better support with helping to conserve their wildlife and forest resources for future benefit.

3.2.2 Current Records of Pileated Gibbons in Dong Khanthung

There are at least seven main sites in the DKT region which have confirmed the presence of gibbons, including Houy Talo, Houy Pasuan, Houy Khem, Houy Kadan, Houy Nang Ing, Houy Dannoï and Houy Laok. Based on estimations of local villagers, there are about two groups per site. The surveyors heard their songs from two survey camps - once at Houy Phak survey camp (14°14'34''N/105°31'28''E) to the south of the camp, and another at Houy Nang Ing (14°19'54''N/105°31'28''E), to the west of the camp (Figure 14).

Apart from the on-site observations, interviews were conducted and a juvenile male and an infant female were found in captivity in Ban Mai and Ban Nong Nga, respectively. Villagers said this time is not always the best time to hear gibbon songs. They explained that it is easiest to hear them during the wet season, but most of the plain areas are flooded then so it is difficult for humans to access the area.

3.2.3 Threats to Dong Khanthung PPA

⁷ BCP worked in Dong Hua Sao and Phou Xieng Thong NPAs from 1995-2001; the project received additional funding of USD 30,000 from the Dutch Government for conducting wildlife surveys and village consultations to proposed the site as NBCA and arranged some basic needs for site management.

The forest of DKT is degraded, fragmented and without a connecting canopy make it difficult for gibbons to move from place to place. Their food sources have also declined (Figure 15). Nevertheless, gibbons in this area have adapted to habitat change and human disturbances in some ways. For instance, in principle, gibbons sing well during the dry season from November to February. Wherever gibbons are present, it is possible to hear their songs during this time. However, based on the information gained from DKT, it is likely that where human disturbances are high, gibbons will not vocalize or sing actively. For example, it seems that the gibbons have adapted to human disturbance by changing their behaviors from vocalizing actively during the dry season to vocalizing (singing) in the wet season because during the wet season when many areas are flooded inhibiting human access



Infant female,
Pileated Gibbon found
in captivity at Ban
Ngong Nga.

Figure 15. Degraded forests, Dong Khanthung Provincial Protected Area

3.2.4 Other Interesting Findings

DKT harbours various types of wildlife habitats, such as lowland/semi-evergreen forest, dry dipterocarp/mixed dipterocarp forest, pine forest, wetlands, a number of salt-licks, fish breeding grounds, riverine areas, grasslands and so on. The central part of DKT is very unique with seasonal wetlands that have soil characteristics locally known as *Khee ja lok*⁸. These diverse wildlife habitats make it ecologically suitable for many wildlife species. In addition, Dong Khanthung hosts some of the highest quality dipterocarp forests in Lao PDR due to its forest structures and patterns of distribution. Some areas are sacred sites, such as in Sapheavada and Sasaming (and unusual trees that are locally called “saming” trees grow in this unique perennial wetland).

3.2.5 Confirmation of other Key Wildlife Species in Dong Khanthung PPA

According to the surveys conducted by Round (1998) in DKT, there were at least 30 species of mammals (excluding bats), of which 17 were key species, plus 201 bat species, 253 species of birds, 54 species of reptiles and amphibians (7 species of turtles) and probably a hundred or so species of fish. Although some habitats in DKT are undergoing further degradation nowadays, the presence of many key wildlife species has still been reported. Thus during the surveys wildlife and evidence of wildlife were found, especially large birds and forest birds in general. The number of wildlife species present would likely remain the same as noted in the previous study, but lower in population (e.g. about 50 Asian elephants used to live in the area but this has decreased to a maximum of 8 today). Still, DKT may be the only area in Lao PDR where good opportunities exist to detect many forest birds in a single day trip. Based on the information gained from local interviews and current observations, the key wildlife species still living in the area are as follows:

Mammals

- Eld’s Deer (*Cervus eldii*) may still be present in an area where they were reported in Kadian area in the past, but it is uncertain if they are still present today. In 1997, WCS (Round, 1998) confirmed that one deer was captured and then died. At the time, it was estimated by villagers that about 10 animals remained in the area. Now, villagers from Ban Takang saw only one adult male last year in Nongben. It was believed that it crossed over from Cambodia. But this species probably no longer exists in DKT. Other areas of Laos, such as in Xonbuly of Savannakhet province are the only place where Eld’s Deer presence is confirmed. It is critically important to pay more attention to discovering and conserving this species in DKT. If there is no further disturbance in the area, Eld’s Deer may reappear.
- Banteng (*Bos javanicus*) are reported in 2 sites, the Kadian and Houy Vien/Nang Ing areas to the west of Ban Po, but villagers could not estimate the size of the population. Tracks of this animal were seen in Houy Nang Ing, and old tracks and bones were found at the salt-lick in Kadian. Banteng remain in several sites in Lao

⁸ *Khee ja lok* refers to soil piling up over the area from the activity of large soil worms in seasonally flooded forests; these piles appear from the water level. Some piles are as high as one meter above the ground surface and at a distance from each other of about 1.5 meters. It is very difficult to get through by walking up and down or jumping from one to another, as walkers often become stuck in understory trees and climbers. Villagers report that it is impassable during the wet season because of floods.

PDR, mostly in the south. This animal is important to protect because it is at risk of extinction in the country.

- Asian elephant (*Elephas maximus*). There are 2 herds: One herd of 3 elephants was reported in Houy Paseun of Ban Paeo, and another herd of 5 elephants was reported in the Ban Houysai area. It was reported that the Houysai group had destroyed farmers' gardens. In the past, there were about 50 elephants in the area and villagers were afraid of them so villagers did not go far away from their villages. Although no one has hunted them, the numbers of elephants have decreased because they likely moved across the border into Cambodia.
- Gaur (*Bos frontalis*), there are 2 herds: one herd of 5 animals was seen by Mr. Samli - Vice District Governor of Moulapamok District, in May 2010. He saw the animals crossing the road⁹ from north to south. The Vice District Governor mentioned that they must be protected because their population remains very low compared to the number in the past. This herd lives in Kadian area and tracks were seen at Piouy salt-lick. Another herd live in the foothills close to the Houy Vien area, west of Ban Kem.
- Tiger (*Panthera tigris*). Villagers in Ban Paeo saw a tiger once last year while it was eating sambar at the Houy Paseun salt-lick. Its footprints were also seen in the same area.
- Leopard (*Panthera pardus*). There are frequent reports of this species' presence in the area from tracks and direct sightings, especially in the Houy Pasuan area.
- Other medium and small-sized cats, There are some reports of leopard cats (*Prionailurus bengalensis*) and fishing cats (*Prionailurus viverrinus*), but almost no other cats, such as clouded leopards and marbled cats, have been reported.
- Golden jackal (*Canis aureus*) is still reported in the area, mostly in the Paseun, Khem and Nang Ing sectors.
- Dhole (*Cuon alpinus*) is still reported in the area at sites similar to the golden jackal but often appears during the beginning and end of the wet season.
- Asiatic black bear (*Ursus thibetanus*). It is not certain whether the bear tracks that were seen in several places in the area were from the Asiatic black bear or Sun bear. Nevertheless, a number of bear species have been reported in the area. The surveyors encountered tracks in several places during the surveys, especially at Nam Phak and Houy Nam Ing. One villager in Ban Somhong reported being attacked by this animal. This man who got attacked by the bear joined us in the trip to Ban Thahin. Reports of bear attacks on people in this area are frequent.
- Pangolin (*Manis* spp). It is rare to find this species in the area.
- Sun bear (*Ursus malayanus*) has been sighted with the same frequency as the Asian black bear, but this species is believed to be uncommon.
- Sambar deer (*Cervus unicolor*). The surveyors saw much evidence of this species' tracks, including very fresh tracks found along the banks of Nam Phak, Xe Lamphao and Nam Kadan, in addition to other sites.
- Stump-tailed macaque (*Macaca arctoides*), is also reported and with certification of the presence of this animal in the area, especially in Paseun sector.
- Long-tailed macaque (*Macaca fascicularis*). This species is reported in the area, with one juvenile in captivity in Ban Thahin.

⁹ This road connects from Ban Kadan to Ban Nong Nga, Ban Po, and Ban Kem and ends at the triangle Lao-Thai-Cambodia border. This road is being upgraded and it will be completed very soon.

- Northern Pig-tailed macaque (*Macaca leonina*), just reported by villagers in Ban Thahin and Ban Peao. They were confident on the presence of this animal in the area, especially in Paseun sector.
- Leaf Langur (*Trachypithecus garmaini*), The presence of some groups was reported, even though this species and a number of other monkeys are rarely found west of the Mekong.
- Otter (*Aonyx* and *Lutrogale* spp). Both species are reported. The habitats are very suitable for otter species.
- Black giant squirrel (*Ratufa bicolor*). The surveyors did not encounter this species or hear about it in interviews but the previous survey of WCS shows confidence in its presence.

Birds

- Sarus crane (*Grus antigone*), has been seen just once in pairs last year at Nongben wetlands in Takang area; they occasionally visit the site in the beginning of the dry season – December to February. Also, other water bird species appear at the same time of the season.
- Pelican (*Pelicanus sp.*). Two years ago during the wet season Mr. Lam from Ban Peao saw one pelican in his village area, at the pond near the road access to Houy Talo.
- Ibis (*Pseudibis* spp.), maybe still visit the area. Both Giant Ibis and White-shouldered Ibis were reported in Ban Khem and Kadian sectors, respectively, by WCS (Round, 1998) but the surveyors could not assess if Ibis still exist in the area now. It was not a target of this mission to identify this species unless there was opportunity to visit potential habitats. Nam Phak and Kadien are considered good sites for ibises where peddle flats and some ponds are still available.
- Great adjutant (*Liptoptilos dubius*). There are reports of its appearance during the wet season and at the beginning of the dry season when the water level in the ponds and paddy fields is receding. It is believed that many water birds can catch fish better during this time.
- Great hornbill (*Buceros bicornis*), was reported in the area, especially in Pasuan sector. Only Oriental pied hornbill was seen during the survey and another in captivity at Ban Thahin.
- Vulture species. It is certified whether or not if any vultures species exists in the area. – perhaps just visiting.
- Green Peafowl (*Pavo muticus*). There are many reports of this species and most appeared during the crop harvest season when come to eat rice in the paddy fields. Villagers said this species is considered a crop pest, second to parakeets. Farmers have to stay in the fields to chase the birds and to prevent them from causing crop damage. It seems there is nowhere else in Lao PDR that green peafowls destroy a rice crop. As it is only reported in this area there is probably a high population of green peafowl presence.
- Oriental darter (*Anhinga melanogaster*) is reported in the Thahin area, and the Xe Lamphao provides a suitable habitat for this species.
- Masked finfoot (*Heliopais personata*). This species might be present as it was reported in the previous surveys of WCS but it is not confirmed if it still exists in the

area. As for Laos, it is understood that this species is present in the Xe Khaman upstream, Attapeu Province.

- White-wing duck (*Cairina scutulata*). Two pairs were seen at the Houy Talo and Nam Phak. This species is very rare in this region, and is only reported in Nakai Nam Theun and Xe Pian NPA. This species is considered of high conservation significance.
- Lesser adjutant (*Leptoptilos javanicus*). It was reported that the species is often seen in the beginning of the dry season and could be observed in all sectors in DKT. However, some villagers could not distinguish this species from the great adjutant.
- Woolly-necked stork (*Ciconia episcopus*). One was seen by the surveyors at Nong Pheu.
- Siamese fireback (*Lophura diardi*), has been reported a lot in the past. It was detected frequently when driving from Ban Kadan to Ban Thahin. It is believed that the population of this species is still good, as villagers told the surveyors that the species is seen very often in DKT.
- Black-neck stork (*Ciconia ciconia*). It was reported that this species visited the area during the wet season until the middle of the dry season.

Reptiles

- Siamese Crocodile (*Crocodylus siamensis*). It was reported to be present in Nam Phak and Xe Lamphao in the wet season. Xe Lamphao, with riverine habitats of gallery forest and bushes, as well as seasonally flooded areas of DKT are likely suitable habitats for Siamese crocodile.
- Bengal monitor (*Varanus bengalensis*). Though the animal itself was not observed, surveyors were made aware of its presence by the scratches the animal had made on many trees in the area.
- Water monitor (*Varanus salvador*). Surveyors saw this animal species twice at the Nam Phak survey camp and many tracks were seen along the riverbanks, on muddy flats in particular.
- Turtles. 6 species of turtles were reported in the area by WCS in 1998 and still exist today. No detailed information was given during this visit.

Also, a number of secondarily important bird species and mammals were seen and reported including eagle species, hornbills, Asian golden weavers, lesser whistling ducks, hill myna, doves, pigeons and parakeets. Along the road as the surveyors drove back from Ban Thahin to Ban Po a few species of eagle species were observed in a number of locations, though their exact species was unknown. Plenty of rabbits' tracks were observed along the road; for this reason, the area is practically considered a rabbit plain. Tracks of the animals were seen in the sand, clearly showing their footprints. It was reported that there are two species of rabbits living in the area. Civet species, which are another important animal that dwell in the dipterocarp forest, were reported, but the team did not investigate which specific species was. Only one common palm civet was spotted in Ban Thahin.

DKT is classified as an Important Bird Area (IBA) by BirdLife International. It is well recognized by biologist community as one of only two areas (along with Xe Pian NPA) supporting habitats of water birds in Lao PDR – and perhaps it is better than any other places.

Apart from water birds, it is only one of a few areas that still has reports of a good population of green peafowl. This species is reported in all sectors identified in DKT where they often come to feed during the rice harvest season. One special squirrel common in the area was also observed very frequently by the team. It may be endemic to this area or to the west of the Mekong River, and perhaps found in Cambodia too. This species of squirrel is not found in the east of the Mekong. Based on detection, it has a mark on its tail with white stripes of about 4 cm. This squirrel is dark red in colour, including its tail, with white-stripes in the first few cm of the tail. Based on the description, it could be called in Lao a white-striped tailed squirrel. The previous reports by Round (1998); Duckworth (1999) mention the three important squirrels found in DKT as Black Giant Squirrel, Variable squirrel (*Ratufa bicolor*) and Cambodian striped squirrel (*Tamiops rodolphii*) but no descriptions are given. The surveyors believe there is another species found west of the Mekong River and it is referred in this report by using its local name *kahok khang hangkan*, and proposes that it should be called *Callosciurus finlaysonii annellatus* (Duckworth *per. com.* 2010).

According to local reports, the Cambodian side is forested and well-conserved and partially well-conserved on the Thailand side as well. The movement of wildlife between Cambodia and Lao PDR is well reported, especially large mammals and large birds.

3.2.6 Recommendations for Dong Khanthung PPA

On the whole, DKT is still in a good position to be protected for the conservation of many important large mammals and water birds as well as forest birds. It is highly important that the area is established as a conservation area with national and international recognition. The conservation of forests and wildlife communities in this area of Lao PDR can also benefit conservation values in the region as a whole. The most suitable category would be a National Wildlife Sanctuary; this idea was raised with the Vice District Governor, Head of National Protected Area Management Division in Champasak Province, the Head of Champasak PAFO's Protected Area Unit, and a number of local officials and villagers during the survey, and was well-supported. However, zoning and boundaries need to be discussed in more detail. It is probably not necessary to cover the whole area but the most important one (at least 300 km²) includes Pasuan sector and parts of Khem sector, covering Ban Paeo, Ban Po and Ban Thahin (Figure 16). At the very least there will be a kind of conservation area with better management to ensure the maintenance of key wildlife species, where local communities take an active role in regular monitoring. Regardless of any immediate actions, additional field trips and discussions on boundaries and zoning should be conducted to work towards improving DKT's conservation. A co-management approach with local villagers, officials and the army would be applicable in the area.

In conclusion, although DKT has been highly disturbed in the past, many key wildlife species are present and it is probably hard to find such important habitats and abundance in wildlife communities in other locations in Lao PDR. It is one of a few historical places in Lao PDR that Javan rhinoceros (*Rhinoceros sondaicus*), Kouprey (*Bos sauveli*) and wild buffalo (*Bubalus arnee*) were reported (Round, 1998; Duckworth et al. 1999; Salter, 1993.). Other key species (e.g. Eld's deer, Asian elephant, Tiger, Gaur) that are still present today, will also be gone if no conservation interventions are put in place. Therefore, it is critically important

to protect the area in consultation with the GoL and ideally to establish the area as a National Wildlife Sanctuary (NWS) (Figure 15). Doing so will help to rehabilitate wildlife habitats and wildlife communities in the area and if successful, DKT will be the first NWS in Lao PDR. NWS status may also attract donors, providing opportunities to conserve key wildlife species, protect critical habitats and improve local livelihoods at the same time. Some villages that have traditional knowledge in the management of wildlife and forest resources should be respected and empowered to prevent outside encroachers to extracting resources as road access improves.

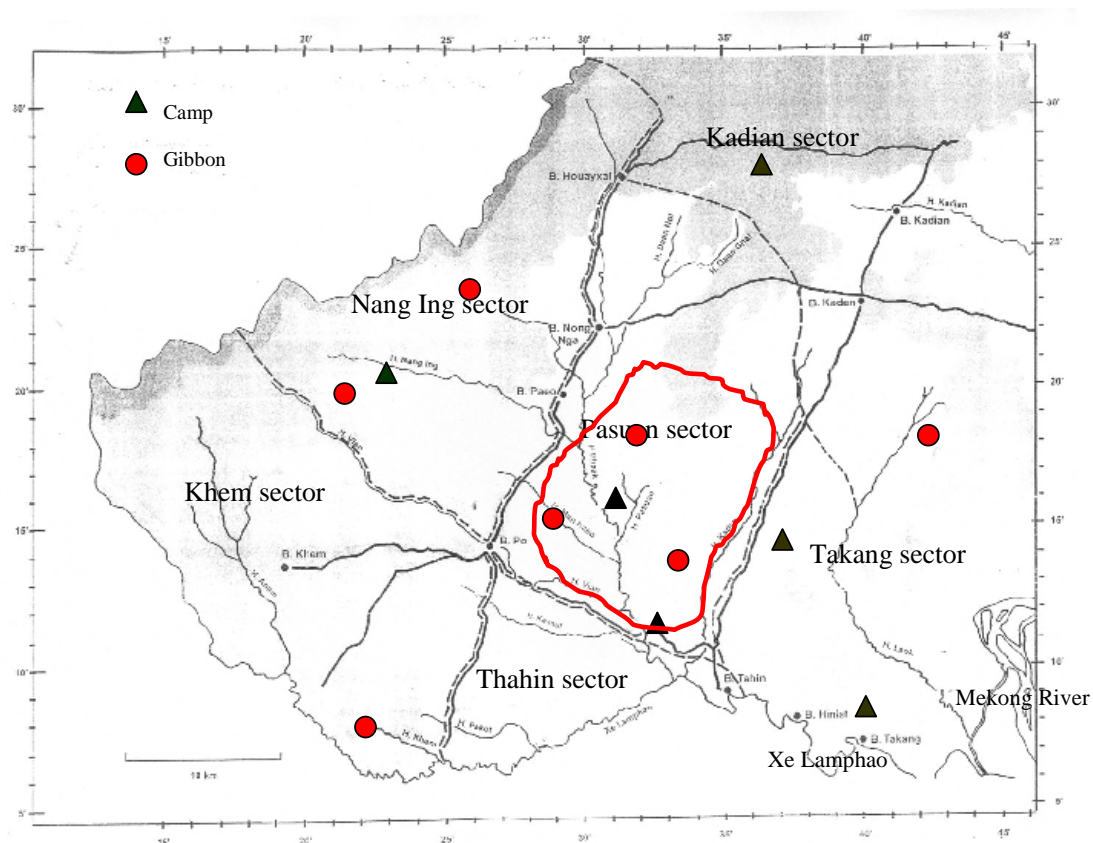


Figure 16. Map of proposed Dong Khanthung National Wildlife Sanctuary

4. Conclusion

These two surveys and their important findings have helped us to better understand the situation in the sites. Now it is the time to take steps toward the conservation of these two gibbon species, particularly in DKT PPA. Because Laos has taken so long to plan for improved management of DKT, we are running late. We have one last opportunity for conservation, before nothing is left to conserve. Conservation is becoming more and more important to sustaining the local environment, livelihoods and incomes, as it is possible to

contribute to economic growth and local livelihood security through ecotourism development and revenues earned from forest products.

On the whole, the teams gained much new information from the surveys and this process should be replicated in other places where uncertainty about gibbon populations remains. In addition, should the opportunity arise to survey other sites outside of conservation areas where there is a paucity of information on gibbon populations and status, this should be carried out in order to obtain additional information contributable to a better plan for gibbon conservation nationally. However, due to time and budget constraints, areas for surveying must be prioritized. Specifically, according to the FFI report (Duckworth, 2008) as to fully understand and maintain the diversity of gibbons in Lao PDR, further surveys are needed in the areas where unconfirmed species exist in the south-east part of the country (among Dong Phouvieng, Xe Bang Nuane and Xe Sap, and partly Xe Pian NPAs). Surveys are also needed for the Yellow-cheeked Gibbon, which has only just recently been reported in Sekong Province. Finally, some parts of northern Vientiane Province and Bolikhamxay Province should also be investigated. A detailed map of gibbon distribution in Lao PDR, including populations outside the conservation areas, is a necessary tool for gibbon conservation management.

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List of Key GPS coordinates of survey areas and key wildlife records

Location	GPS	Description
Nam Phui NPA		
Phou Tong	18°37'30'' N/101°26'53'' E (750 m above sea level)	The high mountain of the eastern part, front to Ban Nakong, making the eastern border ranges of Nam Phui
Houy Hang – survey camp	18°37'31'' N/101°26'54'' E 463 m asl.	Villagers from the eastern boundary used to find wild food in this area (rattan, crabs, fish)
Houy Khee	18°37'32'' N/101°25'55'' E	Camped in this area, lot of Pukhom “large crabs” and some small fish in this river.
Houy Khee watershed	18°37'37'' N/101°25'32'' E 657 m asl	Forest fire is largely in this section. On the east of this mountain is Houy Khee and on the west is Houy Sana
Houy Sana		It is located in central area, walk almost two days to reach this area.
Houy Hoy – survey camp	18°38'08'' N/101°23'53'' E 486 m asl.	Tong Luang settlement is down from this camp.
Phou Meu – east	18°39'10'' N/101°22'56'' E 1,118 m asl.	Saw gaurs' tracks in this mountain, about 3 animals.
Phou Meu – west	18°39'13'' N/101°22'49'' E 1,144 m asl.	Western of Phu Meu, saw sleeping site of gaur on this mountain.
Nam Lop – camp	18°39'43'' N/101°22'37'' E 947 m asl.	This stream is located inside the area but not much fish and crabs. Found fishing and hunting camps in this area – probably high disturbance
Mountain	18°40'07'' N/101°23'21'' E 1,201 m asl.	Next of this area to the west is Phu Pu where gibbons are reported. Forest fire is widespread in this area.
Phou Dam range	18°38'00'' N/101°21'47'' E	
Phou Dam – survey camp	18°38'56'' N/101°21'02'' E	
Pha Tom – foothill	18°39'21'' N/101°21'11'' E	

Gibbon site	18°39'25'' N/101°21'14'' E	Gibbons used to call in this area
Mountain - degraded habitat	N: 18°40'07'' to 18°42'53'' E: 101°23'16'' to 101°23'18''	All parts in this stretch are degraded land, only bare land with weeds found.
Upper Houy Keo - Cattle farm	18°42'53'' N/101°23'18'' E	About hundreds of cow were raised in this area
Navene	18°47'47'' N/101°22'09'' E	
Dong Khanthung PPA		
Moun District		
Houy Kadien		
Ban Nongbuathong		
Ban Kadan	14°22'18'' N/105°40'21'' E 112 m asl This area will become small town in the near future. New construction is on-going with many facilities available.	This area is located at the cross-roads to Moun district on the east, to Ban Hahin in the south, Ban Ngong Nga in the west and Ban Kadien or Soukhouma in the north.
Ban Somhong	14°19'30'' N/105°40'28'' E	This village is inside the Provincial Production Forest. Wildlife is still reported in this area e.g. bears, gibbons, green peafowl, adjutants etc.
Ban Kadien		
Ban Houysai	14°27'19'' N/105°31'49'' E	
Ban Ngong Nga	14°22'15'' N/105°30'46'' E 114 m asl	
Ban Pao		Ban Pao is a large village, close to core area of Pasuan sector
Ban Po	14°14'15'' N/105°26'32'' E	This village is between Ban Pao and Ban Khem; Ban Po also connects to Ban Thahin in the south. Forests and wildlife in these village areas are important.
Ban Khem	14°13'36'' N/105°19'35'' E	It was relocated back in this area in 1992 as it was

		abandoned during Indochina War in 1970s
Ban Thahin	14°08'56.5'' N/105°35'03'' E	
Ban Hinlat		
Ban Takang	14°08'24'' N/105°39'11'' E 77 m asl	Nong Ben wetlands belong to this village area
Ban Don Dou		
Ban – close to Mekong River		
Ban – close to Mekong River		
Ban – close to Mekong River		
Dipterocarp – important		It looks like a unique habitat, reports of many rabbits, saw number of bird species. This area is important habitat for water birds during wet season.
Forest-type corridor zone	14°15'38'' N/105°29'57'' E 77 m asl	This is the corridor zone between dipterocarp forest and semi-evergreen forest
Houy Talo	14°15'00'' N/105°30'52'' E 78 m asl	This area was reported as one of the places where could hear gibbon songs. It is semi-evergreen forest
Nam Phak – survey camp	14°14'34'' N/105°31'28'' E 77 m asl	This area was reported as one of the place where could hear gibbons but did not hear until late morning. Saw gaur's tracks in this area and also found white-wing duck in late afternoon and morning. Still water of this river is important for many water birds – probably including ibises.
Nam Phak – heard gibbon song	14°14'34'' N/105°31'28'' E 77 m asl	At this point in morning, heard gibbon songs from southern direction.
Important area for wildlife	14°15'04'' N/105°01'10'' E	Found good forest and many encounters with many bird species
Nam Phak – the mouth of Vien stream	14°12'51'' N/105°31'18'' E 76 m asl	Saw a lots of sambar tracks and other wildlife in this area
Nam Phak – Vanghin	14°12'29'' N/105°31'36'' E 75 m asl	Villagers from Ban Hat (?), found camping for fishing in

		this area, with permanent camp. As observed they probably use electrical fishing gear. Quantity of fish harvested per day, e.g. channa and cat fish.
Houy Kadan bridge	14°11'55'' N/105°30'19'' E 126 m asl	
Nong Ben – large wetlands Survey area	This GPS waypoint is at the north of the wetlands. Ban Hinlat will be relocated to this area as the old settlement near Xe Lamphao suffers annual floods.	Nong Ben is important wetland for many water birds, also reports of visits of Sarus Crane in 2009, many large water birds including great adjutants, lesser adjutant, woolly-necked stork etc.
Sa Pheavada - sacred wetland Survey area In the past 15 years, this is one of the important wetlands and has high biodiversity value. Just 8 km to the north from Ban Thahin.	14°13'47'' N/105°36'04'' E 92 m asl	In 1996, only small proportion of paddy land in this Area. The wetland is extremely sacred as no-one wants to go fishing in this area. Now, things change, farm houses are built just by the wetlands, large area of paddy fields were extended there. Further, government plans to relocate some settlements from Mekong to this area as plenty of paddy land available.
Sa Saming the sacred wetland Survey area	14°13'49.5'' N/105°37'06'' E 126 m asl	Similar status to the above sacred wetland, however, villagers from Ban Don Dou started fishing this area.
Nang Ing survey camp	14°21'17'' N/105°20'39'' E	Located in Ban Po area, close to Houy Vian on the south. Gibbon calls were heard in morning at 5.40 as about 1 km from the camp
Nang Ing sector	14°19'54'' N/105°21'35'' E	This survey camp close to Houy Vien.
Evidence of Banteng record		Banteng tracks were seen
Evidence of Bear record	14°21'25'' N/105°20'14'' E	Bear footprints were seen
Evidence of Elephant record	14°26'42'' N/105°53'43'' E	Elephant tracks were seen, it

		is quite old – about a month ago
Kadien sector	14°25'24'' N/105°33'56'' E	Elephant tracks were seen, it is very fresh – about a few days ago
Important water pool for wildlife in Kadien sector – survey camp	14°25'09'' N/105°33'53'' E	Evidences of wildlife, elephants, sambar, barking deer etc in the area.
Important salt-lick for wildlife in Kadien sector	14°25'26'' N/105°35'14'' E	Evidences of wildlife, elephants, gaurs, sambar, barking deer etc in the area.