

Watershed Access and Restriction Framework

1. Introduction

Study after study has shown that the greatest and most globally widespread single threat to the survival of biodiversity is access, and that roads allowing vehicular travel are by far the most dangerous form of that access. This is a worldwide phenomenon, operating in industrialized nations as well as developing ones, although the impacts are generally much greater in developing nations where legal protections for biodiversity, and the means to enforce them, tend to be less rigorous.

It is clear that the truly global biodiversity value of the NPA is due to its history of lack of access from the outside, coupled with a low human population with a relatively light impact on the biota of the area, which itself is largely due to the lack of easy access

Consequently, unless it is extraordinarily well done, provision of access from outside can and almost surely will lead to the demise of the globally important biodiversity values of the NPA and undermine a key component of the rationale for the NT2. WMPA has undertaken a careful participatory survey/study to determine what access is really needed. On the basis of the results it has developed a comprehensive, integrated access plan for the entire NPA, the WARF. Access tracks are to be kept to an absolute minimum. Effective controls over the use of the tracks for access to and export of biodiversity from the watershed are an essential part of the access plan. No routes will be constructed unless they conform to the WARF.

2. Perceived Impacts of the Nam Theun 2 Project on Natural Resources

The Wildlife Management and Monitoring Plan was prepared by Dersu and Associates (C880: Wildlife Programme Phase I) in response to Article 15 of the Concession Agreement. The Executive Summary provide some insights into the impacts regarding the long-term survival in the wild of conservation-priority wildlife species affected by the Nma Theun 2 project, particularly by the Nam Theun 2 reservoir.

“The impacts are stated as follows:

Principal project impacts on wildlife will be:

- *Direct, unmitigatable losses of organisms and some local populations from flooding on the plateau.*
- *Increased human extraction of wildlife and other resources, from several factors:*
 - (i) Concentration of wildlife on islands*
 - (ii) Greatly increased access to the NNT NPA via the reservoir*
 - (iii) Increased extraction and trade in wildlife and other natural resources from project-induced economic changes*
- *Loss of important wetland habitats to inundation*
- *Favorable conditions for the arrival and spread of ecologically harmful invasive species*
- *Wide unnatural variability of flow (and reduced flow) in the Nam Theun River downstream of the dam.*

(Figure 2 Showing the threats to NT2 WMPA areas)

3. Watershed Access Restriction Framework Objectives

The WARF seeks to meet the following objectives:

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- Identify potential threats to the watershed caused by the increased accessibility of the protected area as a result of inundation of the Nam Theun 2 Reservoir
- Develop protected area management responses for the control and monitoring of access to the watershed by residents and non-residents.
- Identify the transport system requirements of residents of the NPA in order to satisfy their reasonable socio-economic development aspirations.
- Identify the level of access to the watershed area (NPA and corridor areas) that is appropriate and types of activities that can be undertaken for non-residents of the NPA.

4. Threats to NT2 WMPA

4.1 Natural resources and land uses in NT2 WMPA areas

- 11 enclave villages (31 Khoum) of NNT NPA have approximately 7,000 villagers who are using land and natural resources in that areas.
- It is more than 41,000 people who live in PIZ villages of Bolikhamxay and Khammouane Provinces that is lead to some illegal use of natural resources inside NNT NPA.
- Illegal activities inside NPA by Vietnamese poachers, such as logging, NTFPs collecting and wildlife hunting.

(Figure 2 Showing the threats to NT2 WMPA areas)

4.2 Access Points into the Nakai-Nam Theun NPA

(Table: 01 and Figure 1 showing the access points)

a. National roads passing corridors and PIZ areas

Two national roads (8A and 12) were passing corridor and PIZ areas, the distance of about 60.5 km. The roads are potential for local (Khammouane and Bolikhamxay provinces) and national economic development that were linked among three countries as Thailand, Lao and Vietnam where is the place have Danang Vietnam ferry port. In the future if the road be upgrade with a high quality that will be good for National ecotourism support and linkage with South-East Asia tourism networking.

b. Red soil surface roads(4 wheel drives, hand tractors and motorbikes)

There are three roads its distance of about 43 km. The roads was using by PIZ villagers to communicate, transport and commercial purpose with other districts.

c. Hand tractor tracks

Inside NNT NPA have 11 tracks, its distance of about 125 km. These tracks use for communication, transportation and commerce among enclave villages and its linkage with NT2 reservoir then joining with Nakai town. These tracks should not be usable by 4 wheel drive vehicles.

d. Trails inside NPA

There are 8 trails inside NPA, the distance of about 81 km, these using for communication among enclave villages.

e. River ways in NT2 reservoir and NPA

There are 10 river ways inside reservoir and NPA, its distance of about 214 km. These can travel by boats to communicate among enclave villages and between NPA to Nakai town.

f. Vietnam border roads and trails

Numerous trails pass to Vietnam into the protected area across the border. Of serious note, a road was constructed on the Vietnamese side all the way to the border, opposite Ban Maka. The connecting of the road into Lao P.D.R. was subsequently terminated by the Nam Theun 2 Project and the requirement to protect the watershed.

- Hochiminh National road of Vietnam was closed to NNT NPA.
- Road from Vietnam joining at upper Namnoy, Teung cluster of NNT NPA.

- Every tops of mountain in NPA were used by outside poachers.

4.3 Reservoir and Southern part of NPA

a. NT2 reservoir (Figure 3)

Based on the decree of 193 PM, the boundary between NT2 reservoir and NPA is along 538 msl lines. Reservoir areas of about 45,000 ha (include islands) and the distance of its border line is 969km. Outsiders can access to NPA and corridor in everywhere by water ways(easy to access in rainy season during high water level at 538m), roads, tracks or trails. In dry season it is more difficult to travel by boats that have to follow river ways at 528m). The water body has a 58 km long boundary with the National Protected Area, between Thalang (northern) and the Nam On (southern). The 16 resettlement villagers were using these river way travels by boats to Southern part of NPA and Special Conservation Areas. From Thalang bridge via thousand islands(Special Conservation Areas) have some resettlement village and Khamkeut PIZ villages were easy access to that areas by boats.

b. Special Conservation Areas (Figure 3)

A very relevant management issue is the highly convoluted boundary caused by the inundation of the Nam Theun 2 Reservoir, following the 538 metre elevation (as prescribed in Article, Decree 193). In the Concession Agreement, all parties have agreed that the Special Conservation Zones will become part of the Nakai-Nam Theun National Protected Area. This being the case, the entrances to the Special Conservation Areas require demarcation. The Nam Theun Reservoir are six vulnerable inundation zones, which have been designated as Special Conservation Areas. These comprise - from west to east – the Thousand Islands (16,633 ha); the Nam Xot (3,971 ha); the Huay Sangong (1,694 ha); the Huay Sanap (535 ha), the Nam Theun (2,045 ha) and the Nam On (2,483 ha). All six inundation zones have to be protected and managed from outside poachers.

c. Artificial saltlicks (Figure 4) and artificial wetlands (Figure 5)

The NTPC experts working with NT2 WMPA and DAFO staff were constructed 8 artificial saltlicks and 31 wetlands for wildlife and aquatic animals. These areas closed to Special Conservation areas in the north of NT2 reservoir or South of NPA. The Law Enforcement teams of NT2 WMPA are more responsible to patrol in these areas (Areas number 4 is high priority for patrolling). As soon as possible, resettlement buffaloes are to be completely removed from these areas.

5. Mitigation measurement of NT2 WMPA threats

5.1 The WMPA Law Enforcement Division

The WMPA has established a Law Enforcement Division under the supervision of a Deputy Director (Head of Law Enforcement). This Law Enforcement Division comprises 20 staff working in head quarter office, enclave cluster offices, the Reservoir Patrol staff and the Village Conservation Monitoring Unit staff. These WMPA staff in turn collaborates with key enforcement agencies (police and soldiers), district agriculture and forest office (DAFO) staff, village representatives and villagers to provide an elaborate law enforcement strategy within the WMPA. These staff provides a monitoring capacity for legal - and illegal access - to the Watershed.

5.2 Boundary Demarcation

Between November 2004 and January 2005, the boundary of the National Protected Area has been demarcated of 470 boundary posts in every 500 meters, 4,720 small sign boards marking on the tree is every 50 meters. Many of prohibited signboards were established in key points of NPA, roads and rivers.

In the past several years, the NT2 WMPA was completed in forests and land use planning, allocation and management in enclave villages (11 villages or 31 Khoum) of NPA and 17 PIZ villages and every year the NT2 WMPA with partner staff have to be monitored and evaluated in each village.

- District provision number 139 was issue for protection of NT2 WMPA areas.
- Field survey and prohibited signboards setting along the road, tracks and Special Conservation Areas.

5.3 Checking people who go in and out from NPA and corridors in land ways

a. Checking PIZ people who go in and out from NPA and corridors in land ways

- The NT2 WMPA will be constructed of 7 road check points: 5 road checkpoints in Khamkeut district (Parkatan, Nakadok, Nongmek, Phonesaat and Thongkhako), one road checkpoint at Thalang village of Nakai district and one road checkpoint at Langkhang village of Bualapha district.
- 8 mobile patrolling teams to patrol inside NPA and 4 mobile patrolling team to patrol in 4 PIZ districts of Khamkeut, Nakai, Nhommalath and Bualapha.
- Sweep patrolling in emergency times.
- Construction of 5 ranger stations: 2 ranger stations of Khamkeut district (Nangoy and Namuang), one ranger station at Nathon of Nakai district, one ranger station at Hangkan village of Nhommalath district and one ranger station at Langkhang village of Bualapha district.

b. Checking people who passing Lao-Vietnam border

- Setting 4 ranger stations (Namxot, Namtheun, Namnoy and Namon rivers) at upper watershed areas where were closed to Lao and Vietnam border.
- Coordination with district and village partners (militia, police, DAFO staff and VCMU) to patrol in priority areas.
- Corporation with relevant partners for Watershed Access and Restriction Framework.

5.4 Checking people who go in and out the NPA by passing NT2 reservoir

- Construction of 2 river checkpoints (Namxot, Namtheun) and 3 NPA posts (Huay Sanap, Huay Sangong and Nam On).
- NT2 WMPA and NT2 Reservoir boundary marking.
- Propose to RMC office for zoning in NT2 reservoir areas as control use zones(for fishing) and protected zones with clear regulations and hand over the right and responsibility to the relevant authorities for management.
- Navigation rout marking with floating and signboards and regulation setting for specific routs (fishing, travel or transportation...)
- Boat registrations have to be finished in RMU and NPA villages.

5.5 Priority patrolling zoning (Figure 6)

The priority zones for patrolling were based on all data from field activities such as, field patrolling, wildlife survey by camera traps and line transects and Participatory Biodiversity Assessment. All data have to combine between biodiversity values and threats to identify the 5 high and 4 medium priority zones for patrolling.

5.6 Patrolling sectors inside NPA for general patrolling

The patrolling sectors inside NPA were based on past forests and Land use planning in the past and based on the geography of the areas for patrolling sector zoning inside NPA with 89 sectors (Figure 6).

5.7 Macro zoning inside NT2 WMPA areas

The TA and staff of NT2 WMPA office was draft of macro zoning inside NT2 WMPA areas that was based on data from forest and land use planning, flora and fauna data, wildlife habitats and social economic development plans. The macro zoning were 6 Totally Protected Zones with high priority, 2 Totally Protected Zones with medium priority, 6 Special Conservation Areas, 2 corridors, 3 Control Use Zones, 2 Tourism Development Zones and Buffer Zones. (Figure 6).

5.8 Conservation, laws and regulation awareness raising

The outreach awareness on conservation, laws and other regulation will be encourage relevant staff, village organizations and local villagers understanding and participating in NPA protection and management.

5.9 Cooperation with Vietnam for biodiversity conservation along Lao and Vietnam border

The cooperation with Vietnam country was very important for biodiversity conservation along Lao and Vietnam border, especially for exchange data of illegal activities inside NPA and lessons learn from law enforcement activities of each others. The cooperation have to followed the Memos which were agreed together in each periods at central level like Department of Forestry Inspection of Lao and Vietnam and local levels such as Khammouane-Bolikhamxay of Lao and Quangbinh and Hatinh provinces of Vietnam.

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Table 1 : WMPA track system

No	Roads, tracks, Trails and river ways	Distance (km)	Description	Priority	Positive impact	Negative impact	Solution
I International roads							
01	Road number 8B is national road start from Thalang village of Nakai district to Phonsath of Khamkeut district	20.5	Road type is red soil surface. The road is pass through Phouhipoon corridor area. Its can use in hold year but it is quite difficult.	High	Using for communication and transportation between two district and connect with Lao and Vietnam border. The road need to be upgraded in the future for connect of the regional tourism networking among Thailand-Lao-Vietnam.	High threat to NT WMPA areas. Poachers use this road enter the corridor areas and NPA to do illegal activities such as logging, NTFPs colleting and transportation.	<p>✳. Thalang village road check point. (Y 2010)</p> <p>✳. Parkatan village road check point. (Y 2010)</p>
02	Road number 12 is the national road, start from Thong kong village access of Nhommalath distict to Langkhang village of Bualapha distict where is the corridor area through Lao(Vietnam border.	40	It is asphalted road.	High	Using for communication among Vietnam- Lao- Thailand in the future after the third Mekong bridge be finished in construction that will be good for National economic development especially for tourism and goods transportation.	High threat to NT WMPA areas. Poachers use this road enter the corridor areas and NPA to do illegal activities such as logging, NTFPs colleting and transportation.	<p>✳. Langkhang village road check point. (y 2013)</p>
	Sub total:	60.5					
II Red soil surface roads (Pickups or hand tractors)							
01	Phonvilay to Nongmeck villages of Khamkeut district.	3	Old logging road of BPKP company. Its can use in hold year but it is quite difficult.	High	Using for travel and transportation between Nongmeck village to Khamkeut district.	High threat to the NT2 WMPA areas. This is because biodiversity that comes from the NPA on the same road from Thameuang	
02	Pompeak to Nakadok villages of Khakeut district.	15	Road type is red soil surface. Its can use in hold year but it is quite difficult.	High	Using for travel and transportation between Nongmeck village to Khamkeut district.	High threat to NT2 WMPA because of its easy to access to the NPA by pickups, motorbike and hand tractors. There is gold mining company close to that area.	<p>✳. Road check point at Nakadok village (Namhuay river). (Y 2014)</p> <p>■. Priority patrolling team of Khamkeut district to patrol in that area. (Y 2010)</p>
03	Vangko to Namuang villages of Khamkeut district.	25	Road type is red soil surface. Its can use in dry season.	High	Using for travel and transportation between Namuang village to Khamkeut district.	High threat to NT2 WMPA because of its easy to access to the NPA by pickup,	<p>▲. Ranger station at Namuang village. (Y 2014)</p>

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						motorbikes and hand tractors in dry season.	
	Sub total:	43					
III	Hand tractor tracks in side Nakai/Namtheun NPA						
01	Nongmeck village of Khamkeut district to Navang village of Nakai district.	30	Old logging road of BPKP company.	Medium	Now the track can be used only for motorbikes by Navang cluster people, in dry season for travelling and transporting some domestic goods from Navang cluster to Khamkeut district and back from Khamkeut to Navang.	High threat, because of poachers use this tract to do illegal activities in side NPA or illegal transportation from NPA to outside.	✳. Nongmeck road check point. (Y 2013) ↑. Navang cluster VCMU to patrol along that tract. (Y 2010)
02	Old Sophan village (Huay sangong) to Navang village of Nakai district. NT2 WMPA have finished constructed ferry port at this site.	31	Old logging road of BPKP company. It is out of use now,	Medium	In the future, the track need to be constructed for solution of difficult transportation by river way in dry season along Namxot river (Walter levels is quite shallow).	Medium threat: some time poachers using this track for doing illegal activities inside NPA or illegal transportation using motorbikes or hand tractors there.	📍. River check point in ferry port (old Sophen village) at Namsagong river. (Y 2011) ■. Priority patrolling team to patrol in this site(area number 4). (Y 2010)
03	Thongkong village to Nakai NPA (Nhommalath district) at huay leuk river	14	Old logging track, now it is only using for villagers to collect the NTFPs.	Low	Village can enter NPA for NTFPs collecting for their livelihood subsistence needed.	Medium impact: Suspected poachers use this track for illegal carrying <u>wildlife and</u> wood of NTFPs out from NPA.	▲. Ranger station setting at Thong Kong or Hangkan villages. (Y 2015)
04	Mark feung to Nava villages of Thaphayban cluster.	8	The track can use for hand tractors and motorbikes in dry season.	High	The track using for communication and trade or traditional purpose inside Thaphayban cluster village and connect to Teung cluster track.	Medium threat – bringing biodiversity to Makfeuang and thence across reservoir.	
05	Thaphayban to Soxleck villages of Thaphayban cluster.	10	Now it is out of use.	Medium	In the future need to be constructed because of dry season is more difficult to use travel by boats along Namtheun river.	Low impact to NPA	
06	Nava village of Thaphayban cluster to	10.5	The track can be used only dry season.	High	The track using for communication and trade or	Medium impact: Suspect to use this track for illegal	↑. Teung cluster VCMU and

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	Vanglair village of Teung cluster.				traditional purpose between Thaphayban cluster to Teung cluster track.	transportation.	Thaphayban VCMU patrolling along this track. (Y 2010)
07	Vanglair to Thongnoy village of Teung cluster.	2	The track can be use in hold year, but difficult to cross the Namnoy river in rainy season.	High	The track can be used by motorbikes and hand tractors for communication and trade or traditional purpose between Thaphayban cluster and Teung cluster.	Low impact to NPA, [But can be used to transport illegal biodiversity]	
08	Thongnoy to Poug villages of Teung cluster.	4	The track can be used only in dry season.	High	The track can be used by motorbikes and hand tractors for communication and trade or traditional purpose.	Low threat to NPA. [But can be used to transport illegal biodiversity]	
09	Nava village of Thaphayban cluster to Tong village of Teug cluster.	6.5	The track can be used only in dry season.	High	The track can be used by motorbikes and hand tractors for communication and trade or traditional purpose between Thaphayban cluster and Teung cluster.	Medium impact: Suspect to use this track for illegal transportation.	↑ . Teung cluster VCMU and Thaphayban VCMU patrolling along this track. (Y 2010)
10	Thongnoy to Teung villages of Teung cluster.	5	The track can be used in hold year, but it is quite difficult in rainy season.	High	The track can be used by motorbikes and hand tractors for communication and trade or traditional purpose inside Teung cluster.	Medium impact: Suspect to use this track for illegal transportation.	↑ . Teung cluster VCMU patrolling along this track. (Y 2010)
11	Teung to Marka tay villages of Teung cluster.	4	The track can be used only in dry season.	High	The track can be used by motorbikes and hand tractors for communication and trade inside Teung cluster.	Medium impact: Suspect to use this track for illegal transportation.	↑ . Teung cluster VCMU patrolling along this track. (Y 2010)
	Sub total :	125					
IV	The trails inside NPA						
01	Navang village of Navang cluster to Thaphayban village of Thaphayban cluster.	24	The trail can use in hold year,	Medium	The trail can be used for travel by walking between Navang and Thaphayban cluster. In the future, this trail will support for ecotourism promotion.	Medium impact : Suspect poachers using this trail for carrying some illegal natural resources out from NPA. This trial passes the key wildlife habitat of Namchair area.	↑ . Navang and Thaphayban cluster VCMU to prol along this trail. (Y 2010)

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02	Singthong to Korbong villages of Thaphayban cluster.	4.5	The trail can use in hold year,	Medium	The trail can be used for travel by walking between village to village of Thaphayban cluster.	Low threat to NPA.	
03	Socklect to Vangchang villages of Thaphayban cluster.	6	The trail can use in hold year,	Medium	The trail can be used for travel by walking between village to village of Thaphayban cluster.	Low threat to NPA.	
04	Markfeung village to Kengcheng area of Thaphayban cluster.	18	Old trail is out of use.	Medium	The trail using in some time by villager for NPFPs collecting or enter their agriculture land.	Low threat to NPA.	
05	Poung to Beuk villages of Teung cluster.	8	Plan for hand tractor track construction.	High	The trail use for communication and trade or traditional purpose inside Teung cluster,	Low threat to NPA.	
06	Tong to Vangkhuay villages of Teung cluster.	3.5	The trail can use in hold year,	Medium	The trail use for communication and trade or traditional purpose inside Teung cluster,	Low threat : Maybe poachers use this trail to carrying some illegal natural resources out from NPA.	↑ .Teung cluster VCMU to patrol along this trail. (Y 2010)
07	Tong to Huaysan villages of Teung cluster.	9.5	The trail can use in hold year,	Low	Villagers of Teung cluster using in some times by walking to communication and trade or traditional purpose.	Low threat to NPA.	
08	Beuk to Kunair of Teung cluster.	7.5	The trail can use in hold year,	High	Villagers of Teung cluster using this trail by walking for communication and trade or traditional purpose.	High threat: Suspect poachers using this trail to carry illegal natural resources out from NPA and the trail connect to the Lao/Vietnam border.	■ . Teung priority patrolling team to patrol along this trail. (Y 2010) ▲ . Upper Nampheo ranger station setting. (Y 2013)
	Subtotal :	81					
V	River ways						
01	NT2 WMPA headquarter ferry port cross NT2 reservoir go along Naxot river to Thamuang village of Navang cluster.	46	It can be used all year round.	High	Navang cluster villagers using this river way for Communication and transportation by boats, but it is quite difficult in dry season.	High threat: Poachers use this river way(Namxot and Nammon rivers) access to Special Conservation Area and NPA to do illegal activities or illegal transportation and fishing there.	📍.Namxot river check point setting. (Y 2010) ▲ . RPU team to patrol in surrounding Special Conservation Area. (Y 2010) ■ . Priority patrolling team to patrol in this

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							site (area number 4). (Y 2010)
02	NT2 WMPA headquarter ferry port cross NT2 reservoir to old Sophen village where is sub ferry port of NT 2 WMPA.	10	It can be used all year round.	Medium	This area is Special Conservation Areas, the RPU teams in normally patrolling in these surrounding areas.	High threat: Poachers use this river way access to Special Conservation Area and NPA to do illegal activities or illegal transportation and fishing there.	☉. River check point in ferry port (old Sophen village) at Namsagong river. (Y 2013) ■. Priority patrolling team to patrol in this site(area number 4). (Y 2010)
03	NT2 WMPA headquarter ferry port cross NT2 reservoir go along Namtheu river to Markfeung village of Thaphayban cluster.	41	It can be used all year round.	High	Thaphayban and Teung cluster villagers using this river way for Communication and transportation by boats, but it is quite difficult in dry season it is difficult cross the Kengluang rapid in dry season.	High threats: Poachers use this river way access to Special Conservation Area and NPA (Namnoy and Huay Tong river) to do illegal activities or illegal transportation and fishing there.	☉. Namtheun river check point setting close to Namnoy river. (Y 2010) ⚡. RPU team to patrol in surrounding Special Conservation Area. (Y 2010)
04	Markfeung to Kobong villages of Thaphayban cluster.	7	It can be used all year round.	High	Thaphayban villagers of Teung cluster using this river way for Communication and transportation by boats, but it is quite difficult in dry season.	Low impact to NPA.	
05	Korbong to Vangchang village of Thaphayban cluster.	21	It can be used all year round.	High	Thaphayban villagers of Teung cluster using this river way for Communication and transportation by boats, but it is quite difficult in dry season.	Low impact to NPA.	
06	Namtheu to Namnoy at Keng pheir rapid is Special Conservation Area.	9	It can be used all year round.	Low	This area is Special Conservation Areas, the RPU teams in normally patrolling in these surrounding areas.	High threat: Poachers use this river way access to Special Conservation Area and NPA to do illegal activities or illegal transportation and fishing there.	⚡. RPU team to patrol in surrounding Special Conservation Area. (Y 2010)
07	Vanglair to Poug village	5	It can be used all year	Low	Villagers of Teung cluster some	Low threat to NPA.	

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	of Teung cluster.		round.		time use this river way for travel by boats.		
08	VangKhuay(E Poung E Beuk villages of Teung cluster.	18	It can be used all year round.	High	Teung villagers of Teung cluster using this river way for Communication and transportation by boats, but it is quite difficult in dry season.	Middle threat: Sometimes, Poachers use this river way to do illegal activities or illegal transportation out from NPA.	☉. Nampheo river check point setting at down stem of Nampheo (Namnoy). (Y 2015)
09	Markatay village to Loa(Vietnam border at upper Namnoy of Teung cluster.	15	It can be used all year round.	Midium	Teung villagers of Teung cluster and Vietnam traders using this river way for transportation by boats, but it is quite difficult in dry season.	High threat: Poachers using this river way access to NPA to do illegal activities or illegal transportation.	▲. Upper Namnoy ranger station setting. (Y 2010)
10	Main navigation rout along NT2 reservoir.	42	It can be used all year round.	High	All resettlement and NPA enclave villagers using this navigation rout by boats for fishing, travel and transportation.	High threat: Poachers using this river way is easy and fast enter Special Conservation Areas, Corridor and NPA areas to do illegal activities and transport illegal natural resource out from those areas.	▲. RPU team to patrol along that navigation rout. (Y 2010) ☉. Huay snap river check point setting. (Y 2011) ☉. Namon river check point setting. (Y 2010)
11	Thousand island areas (Nhalong, Nhala, Namnien rivers and Damsite areas).		Thousand island is Special Conservation Areas, its areas of about 16,633 ha.	Low	Resettlement villagers using these areas access by boats to their farm land and NTFPs collecting.	High threat: The areas is easy and fast access to corridor and NPA. Poachers using several river ways to do illegal activities, transportation and fishing there.	▲. Ranger station setting at Huaphou Nathon of Nhalong river. (Y 2014)
12	Lao-Vietnam access points(Upper Namxot, Namtheun, Namnoy, Nampheo and Nam on)		Easy access by walking along the top of mountains during rainy season	Very high	No	It is very high threat to NPA, such as illegal NTFPs collecting, Logging, hunting.	▲ ▲ ▲ ▲ ▲. 5 rangerstation setting at upper Namxot, Namtheun, Namnoy and Nam on in (Y 2010) and at upper Nampheo in (y 2015)
	Total:	214					

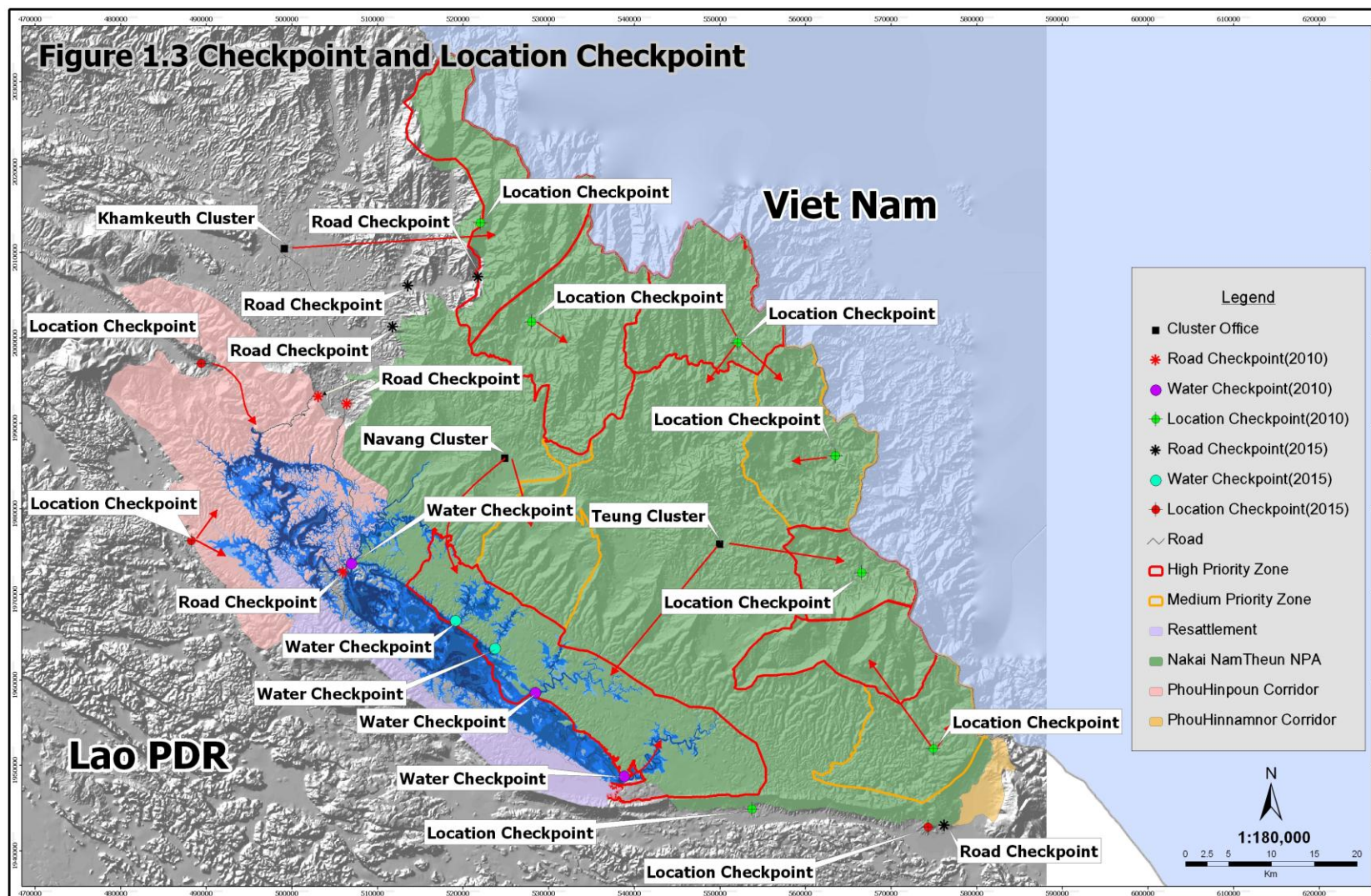




Figure 2: Threats to the Nakai Nam Theun NPA

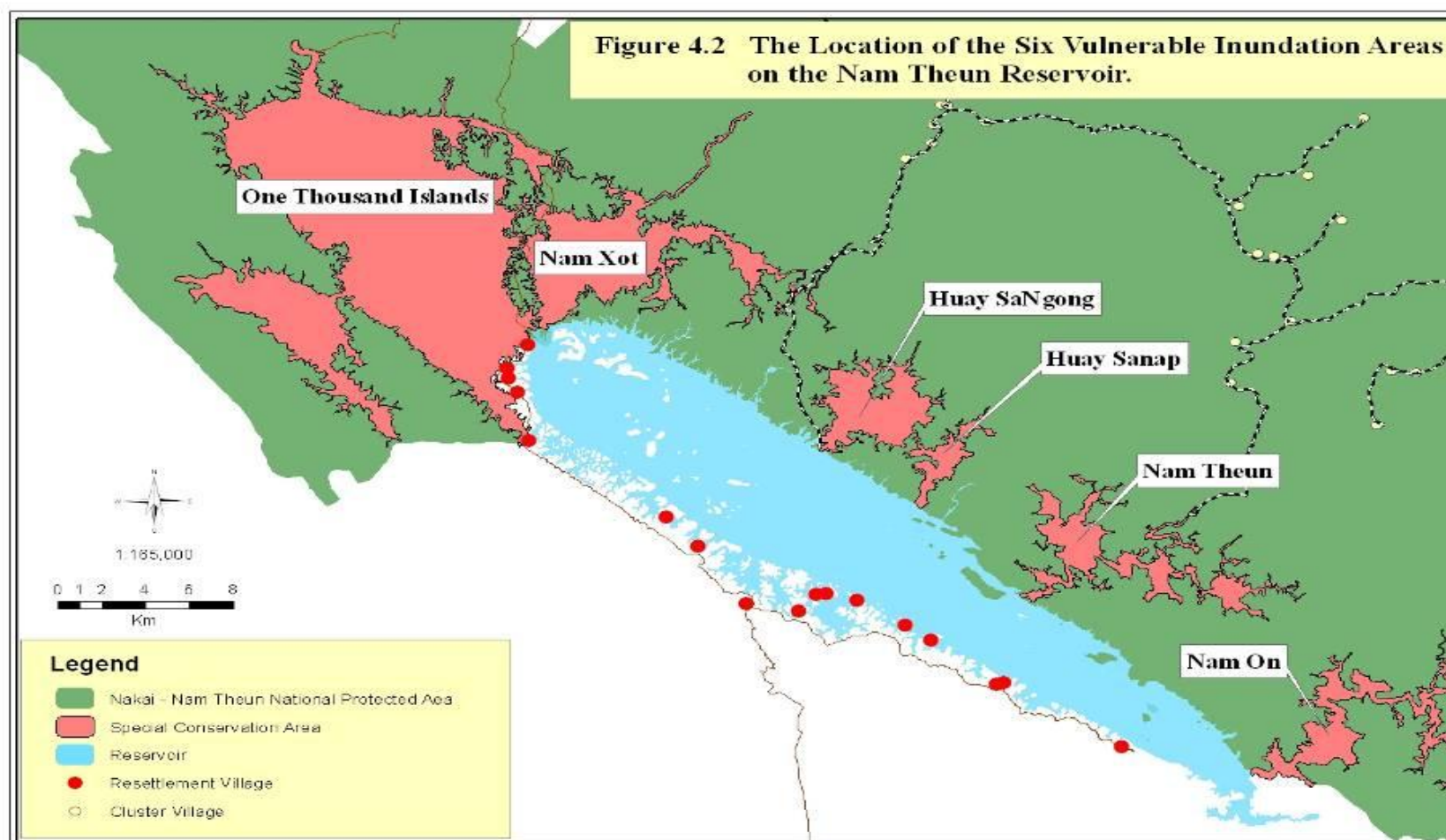


Figure 3: Showing the locations of six vulnerable inundation areas in Special Conservation Zone

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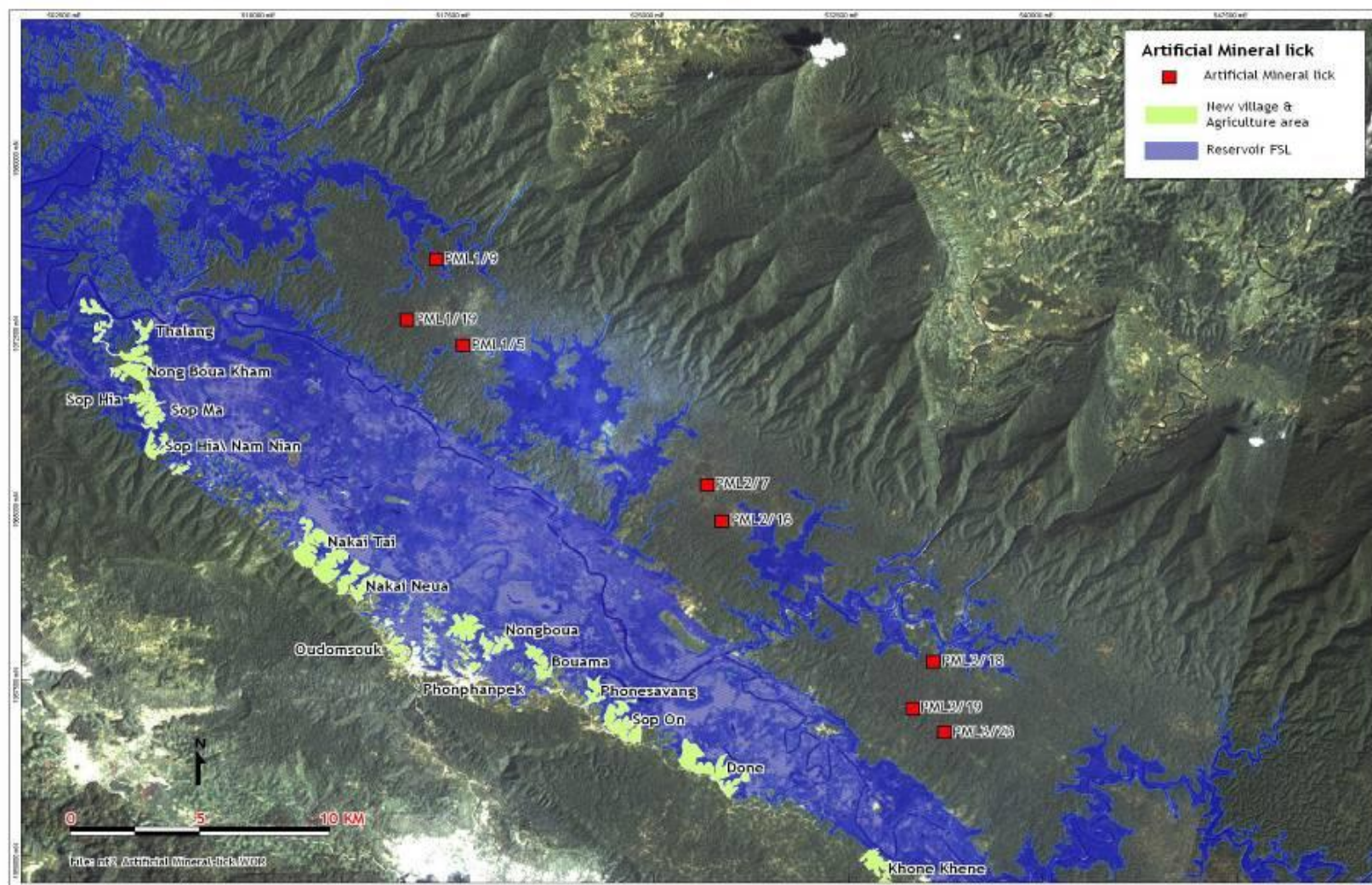


Figure 4: Showing locations of artificial saltlicks

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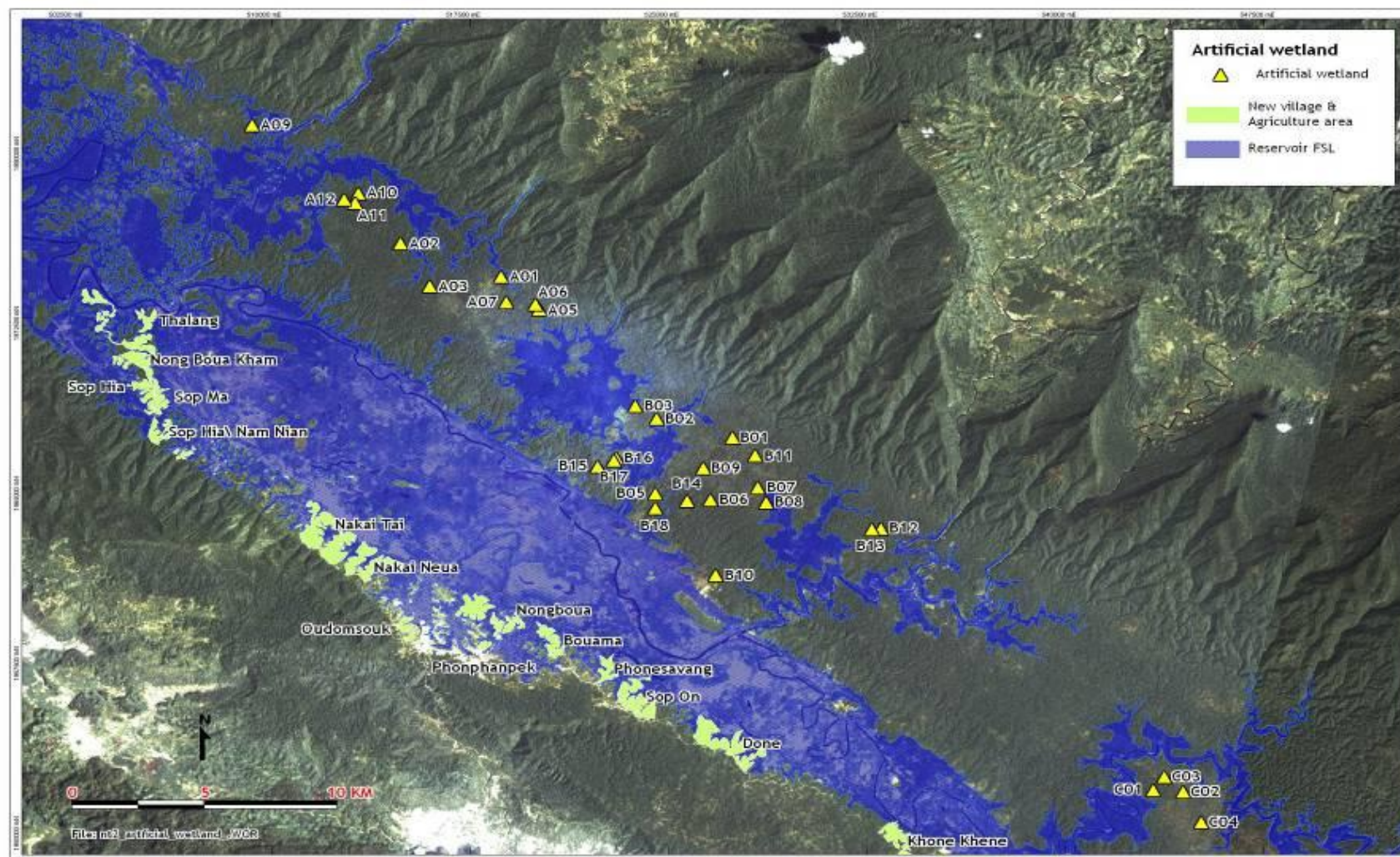



Figure 5: Showing locations of artificial wetlands



Figure 6: Macro Zoning in NT2 WMPA area


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 ກອງເລຂາ ນາກາຍ, ວັນທີ.....

ໃບອະນຸຍາດເດີນທາງ
ເຂົ້າໃນປ່າສະຫງວນແຫ່ງຊາດນາກາຍ-ນ້ຳເທີນ

ເຈົ້າໜ້າທີ່ ດ່ານ:.....ໄດ້ອະນຸຍາດເຂົ້າ
 ໃນປ່າສະຫງວນແຫ່ງຊາດນາກາຍ-ນ້ຳເທີນ ໃຫ້ແກ່ ທ້າວ ຫຼື ນາງ.....
 ອາຍຸ.....ປີ, ປະຈຸບັນຢູ່ບ້ານ.....ຖິ່ນ.....ໜ່ວຍ.....
 ເມືອງ.....ແຂວງ.....ພ້ອມດ້ວຍໝູ່.....ຄົນ
 ລ.ຈຸດປະສົງ: (ໃຜ).....ໂດຍ (ລິດ ຫຼື ຢ່າງ).....
 ທີ່ບ້ານ.....ກຳນົດເວລາໃນການເດີນທາງ.....ວັນ
 ຈະກັບຄືນດ່ານ.....

ລ.ໝາຍເຫດ:
 ເມື່ອຜູ້ກ່ຽວເດີນທາງໄປຮອດບ້ານຈຸດເປົ້າໝາຍແລ້ວ ຫຼື ຫາກມີການກວດກາຕ່າງໆຕາມທາງ ຕ້ອງໄດ້
 ແຈ້ງໃບເດີນທາງນີ້ຕໍ່ເຈົ້າໜ້າທີ່ ຫຼື ອຳນາດການປົກຄອງ ທີ່ກ່ຽວຂ້ອງເພື່ອຮັບຮູ້ ແລະ ຕິດຕາມ
 ໃບອະນຸຍາດສະບັບນີ້ແມ່ນໃຊ້ໄດ້ພຽງຄັ້ງດຽວ.

ໝະນັກງານປະຈຳດ່ານ.....

Figure 7: Permission letter form

Annex 7. Watershed Access and Restriction Framework

Table 2 Priority Areas in NT2 WMPA for protection and management

#	Proposed Totally Protected Zone	Survey Effort	Biodiversity Values	Threats and Enforcement Issues	Biodiversity Research Recommendations
1	Nam Pheo/Phou Vang (Teung cluster)	Little camera-trapping, but fairly extensive villager interview surveys, and field surveys	Historical and recent records of Saola (since 2000)	Snaring and hunting by enclave villagers and Vietnamese	Follow-up participatory biodiversity Assessments (PBAs) required in Teung cluster (2 villages) Camera trapping required throughout site Wildlife transect surveys throughout site Focalized camera trapping at salt licks and gullies for endangered Annamite endemics
2	Nam Nyang and Upper Nam On (Teung cluster)	Very little; only one exploratory visit in 2009. Some biodiversity monitoring camera-trapping on the lower Nam Nyang from November 2008 - December 2008 27 traps for 45 days	Recent Saola report; Tiger tracks observed.	Very high Vietnamese snaring	Follow-up participatory biodiversity Assessments (PBAs) required in Teung cluster (5 villages) (<i>Note: very few villagers have ever gone there.</i>) Camera trapping required throughout site Wildlife transect surveys throughout site Focalized camera trapping at salt licks and gullies for endangered Annamite endemics Highest priority is the upper Nam Nyang. Surveys of upper Nam Nyang tributaries for possible Saola sign.
3	Nam Mon and Nam Xot (Navang cluster)	Camera trapping March 2006- April 2006 50 traps for 45 days	Saola possibly photographed in April 2009. Mineral lick on Nam Mon heavily used by wildlife	Hmong hunting Priority for a ranger station, to control Hmong entry from buffer zone into the area, and support patrols of this remote area.	Participatory biodiversity Assessments (PBAs) required in Khamkeut buffer zone (particularly with the Hmong) and Navang cluster Long-term camera trap monitoring required Wildlife transect surveys throughout site Focalized camera trapping at salt licks and gullies for endangered Annamite endemics
4	Nakai Plateau	Intensive elephant survey work conducted by WCS between September 2004 and May 2006 Conducted dung surveys along 116 line transects of 183.46 km length. Turtle surveys conducted	Largest population of Asian elephants in Indochina (132-138 animals). Eight species of endangered turtles. Large-antlered Muntjac; wild cattle; unique habitat	NT2 resettlement & buffer villager hunting and tree cutting RPU must play a key role in controlling access to this area.	Camera trapping required throughout site Long-term camera trap monitoring required Wildlife transect surveys throughout site <i>Ask Timmins his recommendations</i>

Annex 7. Watershed Access and Restriction Framework

		for 6 months by Cambodian research team. Animal rescue team - particularly more than 30 Large-antlered Muntjacs			
5	Khamkeut/Nakadok (Lak Xao branch)	Camera trapping March 2007- May 2007 50 traps for 45 days	Saola; everwet forest	Hmong in buffer zone, Nakadok & Vietnamese hunting, snaring & tree cutting	Participatory biodiversity Assessments (PBAs) required in Khamkeut District Long-term camera trap monitoring required <i>A higher priority may be focused camera- trap effort for Saola, and/or searches for possible Saola sign.</i>
6	Mid Nam On (Boualapha and Gnommalath)	Camera trapping in Boualapha October- November 2006 50 traps for 45 days Camera trapping in Gnommalath January- February 2006 50 traps for 45 days Line transects 1 November 2007 - 5 June 2008. 72 transects, Av: 1.5 km long	Pangolin (1) Muntjac spp (49) Tiger attack in buffer zone Large-antlered Muntjac; wild cattle; unique conifer habitat	Vietnamese snaring, hunting and NTFP collection It is a priority site for a ranger station for two reasons: It is uninhabited, and Vietnam trails to the Nam Nyang/upper Nam On "High Priority" area run through the area	Participatory biodiversity Assessments (PBAs) required in Boualapha and Gnommalath Districts Long-term camera trap monitoring required
7	Ban Maka area (Teung cluster)	No detailed surveys undertaken to date	Possibly Saola	Vietnamese tree cutting & hunting; road access from Vietnam to border Priority for ranger station, to counter the easy access from Vietnam.	Camera trapping required throughout site Focalized camera trapping at salt licks and gullies for endangered Annamite endemics, including Saola
8	Nam Chae (Navang/Thaphaiban clusters)	Camera trapping November 2007 - December 2007 50 traps for 45 days Camera trapping February	Camera Trap Data: Pangolin sp (1) Douc Langur (3) Dhole (2) Pig-tailed macaque (15) Bear Macaque (1)	Relatively low threat level, although Vietnamese have hunted the area in the past.	Participatory biodiversity Assessments (PBAs) required in Navang cluster and Thaphaiban cluster Long-term monitoring required

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		2008 - March 2008 50 traps for 45 days Wildlife line transects 15 December 2006 - 10 May 2007 (60 transects: Av. 1.5 km long)	Binturong (1) Southern Serow (13) Muntjac sp (77) Dhole Line Transect Data White-cheeked Gibbons (many) Douc Langur (many) May support wild cattle, sambar, Large-antlered muntjac and possibly tiger		
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