



Georgia

Report on Development of Law Enforcement Strategy (LES) including patrolling strategies



UNDP/GEF project "Catalyzing Financial Sustainability of Georgia's
Protected Areas System" (00070382)

Testing site-level revenue generation mechanisms in Tusheti PAs

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The views expressed in this report are those of the author and do not necessarily represent those of the United Nations or UNDP.

Abbreviations Used

APA	Agency for Protected area
AVF	Administrative Violation Form
EPU	Environmental Inspectorate Unit
FFI	Fauna & Flora International
GCCP	Georgian Carnivore Conservation Project
GEL	Georgian Lari
GIS	Geographical Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IUCN	International Union for Conservation of Nature
MIS	Management Information System
MoE	Ministry of Environment and Natural Resources
NACRES	Centre for Biodiversity Conservation and Research
NP	National Park
PA	Protected area
SNR	Strict Nature Reserve
SOP	Standard operating procedure
TPAA	Tusheti Protected Area Administration
TPAC	Tusheti Protected Area Complex
UNDP	United Nations Development Program

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Executive Summary

In order to provide effective law enforcement for the Tusheti Protected Area, it is important to consider a variety of both anthropological and natural factors. There are issues that will require a systematic approach and others that can be addressed more directly. The development of an effective and cost-effective law enforcement system will contribute to improved protection of the PA that is managed with limited resources.

This law enforcement strategy provides a framework for implementing law enforcement activities that address issues that are specific to TPA and defines core directions and connections among them. According to the strategy it should be possible to make more specific operational plans on an annual, quarterly and/or monthly basis.

To achieve effective law enforcement, there are four main goals:

1. Improve the protection of habitats and species by combating illegal activities
2. Improve capacity for law enforcement
3. Improve community participation in natural resource protection
4. Integrate law enforcement issues into other aspects of protected area management

It is recommended that priorities in law enforcement that allow for the effective use of existing limited resources, both in terms of equipment and technical capacity, are identified. Therefore, this strategy sets the most important priorities but in addition identifies issues that are still important but may be considered as secondary priorities at this stage. Implementation of the set goals and priorities is envisaged over the next 2 years. As more resources become available and local experience is accumulated the priorities may be revised and adjusted to the new situation.

1 Introduction

An important challenge for the TPAA is site protection and overall law enforcement. There are a number of factors that influence the achievement of one of the most important strategic objectives: to protect “natural ecosystems - subnival, alpine and subalpine habitats and forest, as well as all elements of the natural ecosystems” as defined in the 2004-2006 TPA Management Plan. These factors need to be identified, evaluated and considered for effective law enforcement including control and prevention of violations. Some of them may be purely anthropogenic while others probably are primarily natural; some of them need a system-level solution, while others may be addressed on the ground.

Establishing a cost-effective law enforcement scheme is absolutely critical for the effective management of TPA. The emphasis is on cost-effectiveness because the assumption is that even with the currently available limited resources (human, financial, technical, existing infrastructure) the overall effectiveness may be improved through better planning and with improved and/or new partnerships, with adequate preventive measures (education, cooperation and awareness raising) and with the support of the partners that may be able to take at least partial responsibilities as permitted by legislation, and also with more political and local support. Improved spatial planning of the PA and improved natural resource management can create a sense of fairness among the local communities and should in general promote positive attitudes toward the PA.

This document presents a law enforcement strategy for TPA and, as such, sets out a framework for law enforcement activities relevant to TPA and defines core directions and connections among them. According to the strategy it should be possible to make more specific operational plans on an annual, quarterly or monthly basis. Though these should be in-line with the overall strategy, they must also reflect the accumulation of experience among PA personnel, particularly as new data is collected. With this in mind, the document also gives, as far as possible, detailed and specific recommendations for law enforcement and patrolling.

2 Strategy development

The process followed for the development of the final strategy can be summarized as:

- Conducting meetings with stakeholders (APA, TPAA, Inspection of Environmental Protection, USAID¹, IUCN² and GIZ³) to form a preliminary compilation of background information
- Reviewing relevant reports, documents and the TPA management plan (2004-2006);
- Reviewing relevant legislation and records of Administrative Violations within TPAC;
- Conducting field visits to TPAC and a capacity assessment of the Tusheti rangers;
- Conducting participatory workshops with TPA rangers and APA staff

¹ US Agency for International Development

² International Union for Conservation of Nature

³ Deutsche Gesellschaft für Internationale Zusammenarbeit

3 Current situation

3.1 Brief description of Protected Areas

Tusheti Protected Area is part of an established network of Protected Areas in Georgia and was officially established on 22nd April, 2003 under the “Georgian Law for the creation and management of Tusheti, Batsara-Babaneuri, Lagodekhi and Vashlovani protected areas”. According to this law Tusheti Protected Area is comprised of three different categories, or zones, of protection, designed in accordance with the IUCN Classification system for protected areas. These are: a Strict Nature Reserve (10,881 ha); a National Park (76,005 ha); and a Protected Landscape (31,434 ha). Two of these areas (the Nature Reserve and the National Park) are managed by the TPAA whilst the Protected Landscape is under the authority of the local government, or municipality.

According to the 2004-2006 management plan the overall objective of the Strict Nature Reserve (SNR) and National Park (NP) is:

“To retain and protect the integrity of landscapes, habitats and biodiversity. In parallel certain habitats and components of biodiversity shall be re-established. Animal and plant life develops and thrives in response to natural undisturbed processes within open ecosystems. Any kind of utilization of natural resources takes place in a sustainable way. Traditional practices and all other human activities are fully harmonized with the needs of natural ecosystems. TPAC shall be a place, where the beauty of an undisturbed wilderness will be a real joy to the visitor.”

3.2 Local population and human presence within the PA

There are no settlements within the SNR or NP. The PL holds several villages that are populated both seasonally and permanently. In total there are 48 community villages of Chagma, Chanchakhovani, Gometsari, Piriketi and Tsovata. However, during the winter months very few people stay in the highlands because of their physical isolation (during this period there is no road access). In the lowlands of Pankisi Gorge, in the southwest of the TPAC, there is predominantly Kist community with some Chechen refugees. These are permanent residences, as these lowland areas do not become isolated during winter.

Sheep breeding is the most prevalent anthropological impact in the TPAC. Historically, the sustained grazing action of the sheep has, of course, had a significant influence on the Tusheti environment, vegetation and landscape but, because of the loss of traditional systems over the past century, the area is being overgrazed leading to habitat degradation and erosion. Agricultural and grazing activities are permitted within the PL; however, grazing is also allowed within the “traditional use zone” of the NP. Shepherds usually set up semi-permanent structures on pastures that they return to each year (summer pastures are active for around five months of the year, typically May to October). An assessment carried out by TPA puts the number of sheep within the NP itself at around 12,000 sheep, 100 cows and 180 horses.

The TPA shares a large proportion of its boundary with international borders and this requires the permanent presence of border police. There are several border checkpoints and stations within the NP and border control and associated activities including patrolling is regularly carried out by helicopter and other transport. All these actions are understandably connected to national security,

but there is some evidence that these activities are a disturbance to wildlife. However, the border police do have an important role to play in the general enforcement of laws within the PA (including in controlling illegal use of resources) and they often collaborate with the TPAA in enforcement matters.

3.3 Legal Base for Law Enforcement

As mentioned before, Tusheti Protected Area was established in 2003 under the “Georgian Law for the creation and management of Tusheti, Batsara-Babaneuri, Lagodekhi and Vashlovani protected areas”. This law represents a legislative act and defines categories of protection, status, administration and permitted activities. It was developed from a more general Georgian “Law on the system of protected areas” (1996).

According to the 2003 law the TPAC consists of three categories SNR, NP and PL, which differ from each other in the level of protection afforded to them as well as in the level of permissible resource use. Activities are managed according to the corresponding legislation and are defined by special management plans for each territory that define protection regimes and management rules for each category and zone.

Law enforcement is regulated by the following legislation: Criminal Code of Georgia (1999), Code of Administrative Violations (1999), Law on wild fauna (1997), Law on Red List and Red Data Book (2003), Law on Fees for Natural Resource Use (2004).

3.4 Threats to biodiversity

3.4.1 Grazing

Grazing has been identified as one of the major threats to biodiversity in the TPAC. Soviets abolished the traditional Tushetian system of grazing and farming consisting of terraced farming, vertical grazing and rotation of grazing areas. This loss of the traditional grazing system has resulted in a rise of unsustainable grazing practices that, in turn, have led to soil erosion and pasture degradation. Much of the TPAC is exposed to the varied effects of grazing with perhaps 80% of the subalpine and alpine meadows used. The soils of the old agricultural area are more fragile and most severely affected by soil erosion. Grazing is also thought to disrupt the spatial distribution of some wildlife causing them to shelter at higher altitudes away from sheep and shepherds.

While grazing is essential to Tushetian culture, it has altered the ecosystem in many ways. On the other hand, it is possible that due to their presence over hundreds of years, sheep have become an important part of the ecosystem and have become an important food source for large carnivores.

In the NP grazing is permitted within “traditional use zone.” Reports from the TPAA suggest that shepherds are staying within the boundaries of these old grazing areas although, on occasions, grazing has been observed within the SNR. This may be partly due to the lack of buffer zones surrounding village areas and a lack of stock routes through SNR areas allowing shepherds access to pastures in the NP areas. This makes the issue of illegal grazing somewhat complex and difficult to manage and enforce.

Within the PL, grazing is allowed under permit, however only one municipality staff member manages grazing, a sector that is extremely significant in terms of income and culture for the Tush communities. This is obviously not sufficient to ensure sustainable use of pastures. Additionally, the situation within the PL also affects the other zones of the TPAC and therefore must be managed in a coordinated manner.

3.4.2 Poaching

The true extent of illegal hunting in the TPAC is not fully understood due to a general lack of ranger patrolling and enforcement data. High risks are detected at Speroza section in the Pankisi Gorge area, which is accessible throughout the year, except for periods of heavy snow. Hunting has the greatest impact on key species populations in the park with tur, wild goat and possibly also bear being the most targeted species.

Distribution of hunting risks according to seasons and places:

It is important to understand the distribution of hunting risks by season, site and species. Current knowledge in this respect is not sufficient. In future, patrolling and biodiversity monitoring data will greatly contribute to this knowledge. Current knowledge already informs us that hunting intensity in Tusheti is strongly correlated with the summer months when access is facilitated by the only road into the PA. However, this is not a static situation and the changing objectives of hunters must be considered. It is believed that hunting with guns takes place mostly outside the tourist season (i.e. during the winter months). In the forests near the villages and/or main tourist trails poacher activity is less likely during the tourist season (summer through to early autumn). During this period the hunting methods change so that the use of snares becomes prevalent or snares remain there from the last spring. In such areas poaching risks may be higher in spring and early summer as well as after the tourist season. The threat to the wild goats may be constantly high in some of the more remote area where tourists are less likely to visit. Generally, however, it is thought that the high-risk periods for illegal hunting in TPAC are May-June and October, coinciding with the movement of sheep in and out of the TPAC.

Who hunts in Tusheti?

According to both the TPAA and local communities⁴ locals are not involved in poaching or traditional hunting. The TPAA believes that hunters from outside are the only group to hunt in Tusheti. However, it is difficult to exclude the possibility that some hunting is being carried out by some members of the resident groups: the border police, shepherds and local communities. Despite the fact that it is illegal to possess firearms in the NP they are certainly present amongst the shepherds (often justified by the need of protection against wild predators). The presence of sheep in the TPAC creates a conflict between wolves, shepherds and local communities and there are anecdotal reports of shepherds killing wolves in order to mitigate stock loss. There have been reports from locals, that in the past, military officials have used helicopters for hunting but it seems that this no longer occurs. Furthermore some members of the Kist community in Pankisi Gorge regularly hunt or guide

⁴ Socio-economic survey report, year 2010 (survey was conducted under the same project in the summer of 2010).

hunts within the gorge where they can access hunting grounds throughout the year, although they try not to go into protected areas.

Reasons for illegal hunting:

The general decline in many species throughout Georgia as well as general faults of the national hunting sector can be directly attributed to poaching inside the PA system.

There appears to be a general feeling amongst both the TPAA and local residents that traditional hunting no longer takes place in Tusheti, and yet there is still a cultural recognition of the possible role of traditional hunting. It is very important to note that, under current PA legislation, it is illegal to hunt anywhere in TPAC whilst the traditional target of Tushetian hunters, the tur and wild goat, are listed in the national red book and, as such, strictly protected everywhere in the country.

Hard economic conditions and limited opportunities for local communities may also contribute to illegal hunting with affected individuals hunting themselves or guiding in the PA. This may be particularly pertinent to the Pankisi Gorge area where limited opportunities for income generation may contribute to increased poaching activity. Further investigations are needed in order to properly understand the socio-economic conditions of the areas and its impact on hunting levels. However the direct impact may be far more important on the Batsara NR rather than TPA.

Negative attitudes towards PAs can also contribute to illegal hunting as there will be a lower degree of acceptance of conservation goals and respect for the laws relevant to protected areas and thus will contribute to a rise in illegal activities occurring in the PA.

3.4.3 Timber cutting

Members of the TPAC communities are legally permitted to remove dead, fallen timber from the forest floor in the NP and PL. However, this permission does not extend to the SNR and cutting of live trees is not permitted anywhere within the national park.

In the past, timber cutting has caused a significant alteration of the landscape, however it has been suggested that, at present, illegal timber cutting has been significantly reduced. This has been attributed to following causes: firstly, severe penalties recently imposed upon a violator and, secondly, a combination of improved communication with local communities, tighter controls and more efficient patrolling. A caveat to this is the possibility that, due to inappropriate zoning of the SNR, some local-level timber extraction is occurring (section 3.7.7).

3.5 Law enforcement system

According to TPAA data the TPAC enforcement force consists of 28 rangers. However, in 2010 recruitment was low and there was less than the full complement of rangers with only 22 rangers employed (excluding the Head of Enforcement). Assuming the full complement, 15 rangers are full time rangers (including the Head of Enforcement, five Senior Rangers and nine Rangers) with the remaining 13 being employed on a seasonal basis, namely for the summer months.

Ranger numbers in the TPAC by district

District	No. Senior Rangers	No. Rangers	Total Rangers	Ranger Station
Chanchakhovani	1	5	6	Samkhevi
Chaghma	1	3	4	
Piriqiti	1	3	4	Kvakhidi
Gometsari	1	3	4	
Speroza	1	3	4	Khadori
TOTAL	5	17	22	3

The current number of rangers employed in the TPAC is insufficient to adequately protect it and those rangers who are there do not have access to the resources, equipment and training necessary for them to effectively carry out their duties. Unfortunately, and despite high levels of unemployment in the region, there was little interest within the local population to take jobs as rangers. It can be assumed that amongst the various reasons for this, the low salary associated with the job, as well as its seasonal nature, were key factors.

The seasonal nature of much of the LE activity and a large number of seasonal rangers presents problems for the general execution of enforcement measures in TPAC. The need to train/re-train a fresh seasonal work-force most of whom lack any relevant skills and experience and to re-establish the whole LE system each summer requires much time and resources.

Rangers usually patrol by horse or on foot for around 2-3 days at a time. At other times they conduct day patrols. During these patrols the rangers observe illegal activities, monitor biodiversity, and meet with the shepherds in the area. Typically, according to the rangers, they do not encounter any illegal activities, or if they do, they do not commit to any enforcement action. Rangers are also not fully effective due to their lack of legal powers. When an offence is detected, rangers complete an Administrative Violation Form (AVF), under the Code of Administrative Violations, which is then submitted to the Court.

Rangers have the legal right to conduct inspections but not to conduct body or car searches, even if reasonable suspicion exists. Rangers also have the legal right to possess and carry firearms but there are currently no weapons available to them.

Currently, there is no formal reporting structure in place by which patrol information can be fed back into the management system to facilitate improvements in law enforcement efficiency and effectiveness and biological monitoring.

The rangers' knowledge of, and skills in, conducting law enforcement activities are at a basic level. The lack of infrastructure, with only three ranger stations (one of them is not completed) is an additional barrier to carrying out their role.

There have been a total of four AVFs (involving illegal timber cutting, illegal grazing and damage to the environment by fire) issued and sent to court since the establishment of the TPA. To date, only

one offender has been penalized. In this case a penalty of 500 GEL and compensation order of 22.03 GEL was imposed for cutting 7 birch trees (0.27 m³). There have been no AVFs or court actions relating to hunting.

3.6 Resources

There is a lack of resources and equipment normally required to effectively and safely conduct patrolling and law enforcement activities in the TPAC. This current deficiency has a significant impact on the ranger's ability to conduct effective patrolling and law enforcement.

Existing resources and equipment in the TPAC (only usable equipments listed)

Resource	Quantity	Remarks
Field Equipment	<ul style="list-style-type: none"> • 1 GPS unit • 2 cameras • Binoculars 5 (very poor quality) • 1 Scope 	Insufficient. Each station/patrol group requires at least one GPS unit, camera, and binoculars.
Communication	Mobile phones (Using personal phones)	Insufficient coverage for Tusheti
Transport	<ul style="list-style-type: none"> • 18 Horses • 3 4X4 vehicles 	Insufficient numbers of riding horses (8 horses are too young to ride). Some rangers have to use their own horses.
Infrastructure	<ul style="list-style-type: none"> • 3 Ranger stations: <ul style="list-style-type: none"> ○ Pankisi Gorge (in the south west of the park) ○ Samkhevi (at the main entrance to the park) ○ Kvakhidistskali (the station is half finished) • 1 visitor centre at Omalo 	Insufficient number of ranger stations to offer effective protection of the PA. Kvakhidistskali Station needs to be completed. Another 2-3 stations are required to fill this gap.
Signage	Some directional signage and boundary markers.	Insufficient. More directional signage, regulatory signage, boundary signage and boundary markers are required. A larger "no hunting zone" sign is required at the entrance to the Park (Tusheti)

3.7 Constraints

3.7.1 *Insufficient funding*

Current budget allocations from APA, which is funded by the state budget, are not sufficient to afford effective protection of the TPAC. This is unlikely to change in the near-future. Therefore, additional, external and on-going funding should be sought to enable all activities and operations to proceed. In particular, this should focus on (in order of priority):

1. Raising rangers' salaries
2. Providing operational costs (food while on duty and patrols)
3. Increasing ranger numbers
4. Supplying essential equipment
5. Completing and repairing existing protection infrastructure
6. Establishing additional protection infrastructure (additional ranger stations)

3.7.2 *Lack of information*

There is limited real-time knowledge within the TPAA concerning the location, intensity and impact of illegal activities on biodiversity, which hinders efficient prioritization and use of staff and resources. Although there is dedicated staff within the TPAA, some of whom have been trained; the data is generally not being recorded. This is due to a lack of certain resources:

- appropriate equipment
- functioning and reliable data recording mechanisms and protocols
- functioning data analysis and reporting systems
- training to interpret and analyse data

3.7.3 *Internal threats*

The law enforcement officers working in TPAC highlands (excluding the Pankisi section) are recruited solely from the Tushetian cultural group. This could potentially create an environment where rangers follow the path of at least cultural resistance in which they fail to enforce the law by issuing an AVF to Tushetian relations, friends and acquaintances or wider members of the Tushetian community. There would be great pressure placed on rangers, particularly those employed on a seasonal basis, to not instigate an enforcement action, particularly with offences that are viewed as minor or culturally acceptable (e.g. persecution of predators and vultures by shepherds or grazing in the forests). Rangers themselves could perceive certain illegal activities as being acceptable in the context of traditional Tushetian culture, creating an inequitable application of the law, as they would have far less trouble issuing an AVF to an outsider. The current penalties for poaching may be so high that there is a deterrent effect to the ranger in issuing them. The rangers (especially seasonal rangers) may not wish to come into serious conflict with their violator co-villager and their families. If taken to court the penalty for illegal hunting may be as high as several thousand GEL which is the amount the rangers certainly know no local person can afford to pay.

3.7.4 *Discipline*

Discipline, is a significant issue for the effective protection and law enforcement program in the TPAC. In particular while totally unacceptable, the consumption of alcohol during patrols is a

complex issue due to the role and significance of alcohol in Tushetian culture. While on patrol, rangers tend to visit many shepherds and even have to overnight at their farms, they are often given alcohol to drink. While refusing the offer may create an embarrassing situation, rangers affected by alcohol are simply unable to respond and carry out their jobs in a professional, safe and effective manner and as a result, the role of the ranger within the community is diminished and potential offenders will take advantage of this situation.

The issuance of weapons to combat poaching in Tusheti is highly disputable until the issue of alcohol is sufficiently resolved.

3.7.5 Shepherds place as a potential base for a poacher

It is known that most hunters, whether local and visiting, need to have not only a local guide but also a "base." The base functions as a shelter and a place where the hunter can get all the information he requires such as reliable hunting spots. In Georgia shepherds and their farms often provide such a base. When this occurs in a protected area the shepherd practically participates in the violation whether or not he gets any direct benefits from it. In the past, before the reform of the border police and while they also had problems of discipline and insufficient resources, the checkpoints of the border police also served as local "hosts" to hunters. At present the situation is radically improved.

3.7.6 Legislation and Management responsibilities

Due to the existing legislation, the APA Territorial Office, the TPAA, manages Tusheti NP and SNR whilst the local municipality manages the protected landscape through its territorial body. Therefore, the development of a single, encompassing management and protection strategy, covering all zones is not currently feasible.

The protected landscape covers a significant area (31,434 ha or 33% of the entire PA) and there should be adequate resources and staff to manage that area. Unfortunately, there is not. Furthermore, TPAA rangers do not have any authority to respond to violations in the protected landscape and this creates a huge inequity in the distribution of law enforcement efforts between the different categories of protected area. More cooperation between the TPAA and the municipality, on specific issues, will guarantee more effective execution of law enforcement and so developing of a PL management plan in accordance with and in parallel to TSR and TNP management plans is recommended. This would a significant step forward toward the coordinated management of the protected areas.

3.7.7 TPA Zoning

The current zoning system in TPAC does not support (to some extent even complicates) the implementation of an effective law enforcement system because:

- 1) The whole of Tusheti is within one of the three protected area category which means that there is no legal hunting zone in Tusheti. This makes it extremely difficult to enforce anti-poaching regulations. Although the prevailing opinion is that the Tusheti community no longer has any real interest in traditional hunting, and most of the poaching is done by visiting hunters;
- 2) There are no buffer zones around villages that would otherwise allow for the controlled and sustainable use of resources such as firewood, and non timber resources. In some cases the SNR is directly adjacent to a village;

3) Sacred places and trails leading to places of worship are often located within the SNR. Some traditional sheep movement trails are also situated on NR. Although it creates problems in law enforcement, it is of course neither feasible nor appropriate to ban sheep/people movement on those trails.

All of the above makes it extremely difficult to enforce the law on Tusheti protected areas.

4 Options for Improving Law Enforcement

At present the TPA law enforcement system needs significant improvement, although the existing system seems adequate in terms of illegal timber-cutting control. Following the planned re-zoning exercise that is due to take place in TPAC, illegal timber-cutting will be further and at large addressed and it is anticipated that there will be no need for further radical changes (although some options detailed herein will impact pine forest protection).

The focus, then, should be on poaching and the implementation of enforcement within the different categories and zones within the PA. The planned reclassification will also contribute to situation improvement in this respect and will facilitate overall law enforcement. However specific steps are needed to ensure maximum effective use of the current limited resources. In this way, the main goal for law enforcement in Tusheti is to implement an effective and applicable patrol system. TPA represents a huge area and for this reason it is impractical to envisage a system that will cover the TPOAC in its entirety. Rather, we are looking at a system that is initially focused on protection priorities with the potential to expand to other areas as staff and resource capacity increases.

The establishment of a permanent patrolling system will make wide ranging and significant contributions to the protection of wildlife and the enforcement of laws in TPA. The mere presence of competent and effective law enforcement teams is likely to deter all but the most determined violators. However, given the nature of the threats combined with the existing law enforcement context and the current capacity of the ranger teams, even the most cost-effective patrolling alone will not be sufficient to secure the protection of the TPAC. A number of options at different levels of intervention will need to be adopted.

Following is a brief description of ways and activities to improve law enforcement in TPA. Most of them have to be implemented within the PA itself whilst others address the issue at a national level.

4.1 Patrol planning and operations

4.1.1 *Patrol planning*

The implementation of a rigorous, targeted and unpredictable patrol programme is a core element for any protected area law enforcement strategy. It will limit the extent to which violators can act illegally and will lead to a higher number of direct detections and interceptions of perpetrators and illegal activities. Patrols assist managers to focus law enforcement efforts by increasing the available information on illegal activity and the location and ecology of important biological resources. This information can then be assessed and the patrol plans updated to maximise the effectiveness and efficiency of the patrols.

At present rangers regularly visit shepherds during their patrols and this is a valid and important part of fostering effective relationships and obtaining local information regarding poaching and animal conflicts and sightings. However, patrols should also utilise other patrol types and should be done with an appropriate degree of secrecy.

Effective counter poaching patrols can be achieved by using a combination of patrol types, conducted on an irregular schedule and being inserted into different area at varying times. Thus, using a combination of the following patrol types will more effectively protect the TPAC:

- Perimeter patrols

These monitor who enters and leaves the park and are used to apprehend violators before they have a chance to enter the protected area. It is very effective when areas of entry and exit have been identified and proper surveillance techniques and checkpoints are utilized.

- Routine patrols

These are the standard patrol conducted by rangers. Routine patrols should always vary their insertion and extraction points. Routine patrols may cover the same area monthly but should not cover the exact same route.

- Core patrols

These patrols cover central areas that should remain free of all human intrusion such as the SNRs

- Deterrent patrols

These are designed to deter possible poacher activities in certain areas. They are normally conducted overtly along the park perimeter and they are a show of presence. The patrol can stop in villages to speak to locals, conduct environmental awareness, and inform the local villagers of protected area laws and the reasoning behind having protected areas.

- Search and capture patrols

These patrols are used when the team identifies a specific target and objective. These should be conducted on an irregular but scheduled basis using deception plans for patrol insertion and extraction. These patrols are designed to specifically search locations of possible poacher activity, and capture the poachers.

- Clearing or sweeping patrols

These patrols consist of combined teams that literally sweep through an area of intense illegal activity to clear out or sweep away poachers in that area.

Routine patrol routes can be standardized (Appendix 5) but not to the extent where patrols are only carried out on these routes and patrols become fixed, regular and predictable.

Where numerous tracks branch off the main path rangers can employ a variety of patrolling techniques in order to intercept offenders. Rangers can set ambushes or use track-sits at major track junctions, or use a "clearing or sweeping patrol" technique (described above). Such maneuvers, of course, must be identified, planned and implemented by the responsible patrol group at the scene.

The starting time of the patrol will depend on objective of the patrol. Some patrols will be carried out early in the morning with the purpose of catching poachers during optimal hunting times, while other patrols, such as patrols to remove snares, can commence during normal work time. It is important to vary starting times so patrols remain unpredictable.

A ranger team conducting counter-poaching operations should ideally be made up of no less than five rangers. However, given the current financial limitations, ranger group size will be less than

ideal, as it will base on current ranger numbers. Therefore, it is expected that standard patrol groups will comprise of two to three rangers. For special operations groups can be combined increasing the size of the patrol force.

The required frequency of patrolling on each route needs to be continually reassessed and modified as a part of the planning process (which derives but is not part of the strategic planning). Patrol frequency planning is undertaken at the operational instruction and patrol plan level and not at a strategy level. Enforcement actions should be prioritized and patrolling matrixes developed to provide guidance and direction for quarterly patrol planning. Additionally, monthly patrol plans are to be developed and implemented at the end of every month based on patrol operational instructions, careful analysis of patrol reports, available resources, and intelligence. Access and threats for illegal activities in most parts of Tusheti protected areas are seasonal (except Pankisi region; see 3.4.2) to produce quarterly plans is not efficient. A more effective model would be to create operational plans according to the following schedule: May-June, July-August and September-November.

4.1.2 Operational costs

Currently rangers have to provide food for themselves to carry out their duties at stations or whilst patrolling and we have to consider that conditions in Tusheti are, generally quite different to other PAs in the country. Rangers in Tusheti, during the summer season, are separated from their families for protracted periods of time. In addition to this there are no basic shops or food markets in Tusheti. The provision of a per diem or supplies to rangers working in Tusheti will, then, go some way to improving their working conditions and, subsequently, increase their motivation. At this stage they should at least be provided allowances or food while on patrols.

4.1.3 Coverage

Current levels of patrolling do not cover the TPAC as a whole as rangers tend to focus on the area immediately surrounding the existing stations and there is a need to extend coverage according to pre-defined protection priorities.

To improve coverage of patrols, additional ranger stations will need to be established in the TPAC (Appendix 5) to offer improved protection to those areas under the greatest pressure from hunting. These will concentrate on perimeter access, coverage of remote areas and the protection of threatened and high conservation priority species.

4.1.4 Training and equipment

Rangers require adequate training and resources to combat illegal activities and better protect the TPAC. Both are lacking at present. Appendices 1 and 2 identify training and equipment requirements.

4.1.5 *Code of conduct*⁵

The effective statutes of the Legal Body of Public Law - Agency of Protected Areas (APA) covers both the Central Apparatus and all of its territorial entities, protected areas including TPA. These statutes set out the scope of work, code of conduct and other relevant provisions. The responsibilities and code of conduct for rangers and other personnel are more specifically outlined in the relevant job descriptions. All of these documents create sufficient work regulations framework for the rangers. However they should also reflect the issue of the consumption of alcohol while on duty which is a problem in TPA and possibly in other PAs. While the consumption of alcohol may have some explanation due to the cultural sensitivity of the rangers' work and their interactions with local people (shepherds) in the field, as mentioned earlier, rangers affected by alcohol are unable to perform their duties and their reputation may suffer. As a result potential offenders may take advantage of this situation. All of this may be especially important in Tusheti where TPA rangers are often the only representatives of the authorities.

Both to the statutes and rangers' job descriptions should include special provisions that staff (rangers) are not allowed to consume alcohol while on duty or to arrive at work while still affected by alcohol. After such changes are introduced to the work regulations the newly recruited rangers will of course be introduced to this restriction. The existing rangers should also be informed that the consumption of alcohol while on duty would be subject to disciplinary procedures similar to any other non-compliance with the work regulations. It may be appropriate to display the code of conduct and relevant disciplinary procedures within the workplace and at ranger stations.

4.1.6 *Patrol data collection*

Patrol data needs to be collected systematically in the field by the rangers then reported monthly through patrol reports. During patrols rangers will need to accurately record evidence and signs of illegal activities. This will be done with a GPS, camera (if available), binoculars and a data record sheet. Rangers will be required to fill out the data sheet that will be submitted with their patrol reports. The data will then be entered into a Geographical Information System/ Management Information System (GIS/MIS) from which reports and maps can be produced. These will chart patrol routes and encounters and provide a better geographical understanding of where rangers are patrolling, where illegal activities are occurring and where animals are present. After analysis, this information can be fed back into the management system to allow for improved planning, more efficient and effective law enforcement and greater scientific understanding of the TPAC.

Two such GIS/MIS programs that are freely available are MIST⁶ and CyberTracker⁷. Both programs are widely used although they require local customisation and training.

⁵ Changes were introduced to the APA statutes while this document was being finalized and after the draft was submitted; certain recommendations outlined in this subchapter including the issue of alcohol consumption have already been incorporated.

⁶ <http://www.ecostats.com/software/mist/mist.htm>

⁷ <http://www.cybertracker.org/>

4.2 Enhancing the ranger force

The immediate priority here is, at the very least, to fill the full complement of available ranger posts i.e. 28 rangers (although 28 rangers would still be insufficient for effective control of illegal activities throughout the protected areas). It can be assumed that the major impediment to a full complement of staff is the comparatively low salary available. Unfortunately, the only way to address this issue is through an increase in state funding to APA and this will not happen in 2011. However as mentioned before (section 3.7.1) increasing ranger salaries and ranger numbers should be one of the highest priorities when sufficient financial resources become available. Initially, an additional three posts (for a total of 31 rangers) should be created in order to allow for effective coverage of all five districts. Beyond that, and in order to provide both complete coverage and optimally sized patrol teams (three or four rangers per team) there should be for a total of 36 rangers. So additional 5 ranger posts should be added. This would allow an increase of patrol intensity while still providing sufficient care to the stations.

Another issue that requires attention in order to improve the overall effectiveness of the ranger force is the practice of hiring seasonal rangers. These posts are particularly difficult to fill as the unattractiveness of low salaries is augmented by the short-term nature of the work. Simply raising salaries for these posts is unlikely to be a productive solution as it may result in a decrease in motivation of permanent staff. The best solution would be to reduce the number of seasonal rangers as much as possible and to increase the number of permanent rangers. The obvious problem here that the TPAA does not need additional permanent staff during the winter months. This problem may be overcome by redeploying surplus Tusheti rangers to other PAs where the administrations actually need additional ranger force in the winter months.

Beyond staffing issues there is, of course, an underlying need to provide adequate training and resources to whatever ranger force is available. This is discussed further in section 5.1.4 as well as Appendices 1 & 2.

Hiring rangers from outside the local community is also an option for raising the overall effectiveness of the ranger service (see section 3.7.3 for more details) though this may incur extra costs if accommodation needs to be provided in addition to normal salaries. The same effect may be achieved through a ranger exchange program between different protected areas. In addition this would be a good opportunity for the rangers from different protected areas to share knowledge and experiences with each other. Financial recourses should be sought from outside of the existing funding for piloting a ranger exchange program.

4.3 Community and visitors participation in natural resource protection

Historically, the Tushetian people have a strong connection with the landscape and have developed forms of environmental governance such as sustainable grazing systems and traditional hunting rules to protect it. However, the methods traditionally used have been lost due to various reasons. Certain level ownership over the natural resources is still prevalent among the Tusheti communities which may be sued to the advantage of the TPAA. On the other hand slightly different approaches should be used in Pankisi Gorge due to differences in local culture. However, the local communities

should be involved in the management of TPA and especially in law enforcement both in Tusheti and in Pankisi.

Generally speaking involving the public in law enforcement is a difficult and somewhat delicate issue, particularly since the local culture does not seem to encourage cooperation with the authorities in respect of reporting violations, more so if such involvement may lead to the arrest or punishment of members of one's own community. For this reason the implementation of a "Community Ranger" program, a model that works well in other parts of the world, does not seem feasible in Tusheti at present (especially considering current legislation and organizational set up of the PA system). However, certain steps, such as raising awareness within local communities, can be taken to pave the way for this approach in the future. Collaboration with the local NGOs sector⁸ is crucial and needs more focus both in Tusheti and Pankisi gorge. Awareness raising activities should focus on the biological, spiritual, cultural and economic benefits of protected areas as well as existing legislation and sanctions regarding illegal uses of natural resources⁹.

APA currently has a telephone hotline for members of the public to report cases of wildlife crime. Actively advertising its existence amongst the local population and PA visitors may lead to a higher degree of involvement by these groups in PA protection efforts. Even with limited access to cell phone coverage in Tusheti this action should be effective in building a support base within, most importantly, the local communities as well as seasonal visitors to the PA. The local people often express concerns about inadequate behavior of the visitors toward the local natural resources. This may be an indicative of a potential of use of the hotline by the locals if they detect a violation by visitors. On the other hand some visitors may also use the hotline if they see a violation regardless the origin of the violator (local Tushetian, other Georgian visitor or international tourist).

One possibility for community involvement in the law enforcement activities is the formation of community groups that would scan the high risk sites for snares and traps to remove or neutralize them. This would be a very useful activity in certain sections of the wild goat habitat (Appendix 5). There will be almost no direct contact between these groups and actual violators, which is an advantage.

4.4 Collaboration with other entities

Considering the geographical location of Tusheti, effective law enforcement cannot be achieved without close collaboration with the border police. It is also very important to cooperate with other agencies such as EPU, the police and the National Rescue Service as well as the PL administration. The exact forms of cooperation will have to be defined through negotiation. It may involve schemes of regular exchange of intelligence and information, joint trainings and even joint patrolling. Needless to say, these kinds of joint operations with a visibly strong and competent agencies would increase rangers' qualification, self-esteem image and public image.

⁸ E.G. Friends of Tusheti protected protected areas.

⁹ Public awareness raising activities are outlined in more detail in the TPA Communication strategy developed within the FFI/NACRES "Georgian Carnivore Conservation Project" and submitted to APA/TPA as recommendations. The implementation of this strategy is expected to start in 2011 under the same project and in close cooperation with the TPAA.

4.5 Enhancing capacity for law enforcement

Ultimately, any meaningful improvement in the law enforcement capacity requires a system-level intervention. However some of the recommendations outlined below may be piloted in Tusheti.

A standard national training curriculum for rangers should be developed based on international and local experience and the national legislation.

Rangers' motivation could be increased through a bonus scheme based on performance against a set of predetermined goals (Appendix 3). A system of scaled salaries should also be implemented so that rangers' salaries depend on years of experience and qualification. This way each ranger will understand that there is an opportunity to progress within the organization. It is a common international practice that rangers that show potential are given opportunities to get more involved in the park management and attend various trainings.

It is also advisable to develop a set of Standard Operating Procedures (SOP) to cover the following core subjects:

- The use of vehicles
- The use of weapons
- Medical evacuations
- Patrol planning
- Code of conduct
- Communicating with a violator
- Use of technical equipment

Once these SOPs have been developed and approved, rangers can be trained and the procedures implemented. Henceforth, deviations from these SOPs would result in disciplinary action (Appendix 4 provides an example of such SOPs for patrolling). There are other SOPs that are less specific to PA management and they may be developed through communication with other state departments that already work from SOPs.

Each ranger has to have his or her responsibilities and goals clearly defined. To this end, job descriptions should also be amended and introduced to rangers so that they clearly understand what is required of them in terms of:

- Duties and responsibilities
- Reporting structure
- Working times (including rosters)
- Expected conduct
- Disciplinary procedures

In addition it is important that rangers are not requested to perform activities that are beyond their responsibility or that could contradict and threaten their role in society.

5 Overall goal

The overall goal of law enforcement in the TPAC is to:

Retain and protect the integrity of landscapes, habitats and biodiversity by the prevention of illegal and unsustainable resource use through appropriate law enforcement measures, while building the institutional capacity of the Tusheti protected area staff to protect the TPAC.

5.1 Law enforcement priorities

In order for resources and skills to be effectively allocated, priorities in specific protection and enforcement needs are required. For further streamlining, these can be divided into primary and secondary priorities so that resources can be first allocated to primary needs with whatever remains then allocated to secondary initiatives. In Tusheti, this would be as follows:

Primary:

- a) the protection of Wild Goat and their habitat
- b) control of illegal logging

Secondary:

- a) the protection of Tur
- b) control of illegal grazing in forests and meadows
- c) control of people's (including visitors) movement in strictly protected zones

6 Objectives for law enforcement

In Tusheti, the four key objectives are:

Objective #1: Improve the protection of species and their habitats through effective law enforcement measures

Objective #2: Improve law enforcement capacity

Objective #3: Involve the local communities in the protection of natural resources

Objective #4: Integrate law enforcement issues into other aspects of protected area management

7 Actions

An action plan for 2011-2012 setting out activities designed to fulfill law enforcement goals is provided below. The plan has been developed with the current level of funding available to APA in mind and the implementation of these actions should be possible through the effective allocation of existing resources and/or by securing additional funding (due to financial shortages the plan does not include many activities that would logically derive from the strategy). After a certain period, e.g.

in two years, it will be necessary to revise these actions and to plan the actions fitted to the new financial opportunities.

#	Activity	Risks/Problems Concerned	Element of law enforcement	Implementing parties
Objective 1: Improve the protection of key species and their habitats				
1.1.	Develop 2-3 month enforcement operational instructions based on current threats, seasonal behavioral and ecological patterns of key threatened species, and management plan (see appendix 5)	Illegal use of recourses	Violation detection & prevention	TPAA
1.2	Develop monthly patrol plans based on enforcement operations plans, current intelligence, analysis of patrol records, biological data and available resources	Illegal use of recourses/violation of protection regulations by visitors	Violation detection & prevention	TPAA
1.3	Analyze patrol and intelligence data using GIS/MIST	Lack of system for information processing and planning	Violation detection & prevention	TPAA APA
1.4	Improve coordination and collaboration with other relevant entities (e.g. border police)	Illegal use of recourses	Violation detection & prevention	APA TPAA

#	Activity	Risks/Problems Concerned	Element of law enforcement	Implementing parties
Objective #2: Law enforcement capacity raising:				
2.1	Increase number of rangers	Poor coverage of TPAC by rangers	General law enforcement	TPAA APA
2.2	Implement bonus scheme (appendix 4)	Low motivation amongst existing rangers	General law enforcement	TPAA APA
2.3	Implement scaled salary system based on qualification and length of service	Lack of motivation for rangers.	General law enforcement	TPAA APA Partner organizations/donors.
2.4	Develop a program of operational guideline with detailed SOPs	Lack of law enforcement implementation	General law enforcement	TPAA APA Partner organizations/donors
2.5	Rangers trainings (appendix #1)	Lack of relevant qualifications amongst rangers	General law enforcement	TPAA APA Partner organizations/donors
2.6	Supply identified and prioritized equipment to the extent possible (appendix #2)	Poorly resourced rangers	Violation detection & prevention	TPAA APA Partner organizations/donors
2.7	Provide pier diems/food for rangers on patrol	Lack of law enforcement	Violation detection &	TPAA

#	Activity	Risks/Problems Concerned	Element of law enforcement	Implementing parties
		implementation	prevention	APA Partner organizations/donors
2.8	Improvement in use of signage throughout the TPACC	Lack of enforcement infrastructure	Prevention of Violations of law	TPAA Partner organizations/donors.
2.9	Develop and implement ranger exchange pilot program (including costing and methodology)	Need of ranger force improvement	General law enforcement	TPAA Partner organizations/donors.
Objective 3: Involve the local communities in the protection of natural resources				
3.1	Advertise wildlife crime hot line among local population and tourists.	Lack of violation detection system	Violation detection & prevention	TPAA
3.2	Mobilize community groups for search and removal operations in specific zones	Lack of violation detection system	Violation detection & prevention	TPAA Partner organizations/donors
Objective 4: Integrate law enforcement issues into other aspects of protected area management				
4.1	Ensure TPAC rezoning reflects law enforcement principles.	Inappropriate zoning with TPAC	General law enforcement	TPAA APA Partner organizations/donors
4.2	Raise awareness of law enforcement issues (legislation, penalties etc.) amongst Tusheti and Pankisi gorge communities	Lack of awareness and support from local	Violation detection & prevention	TPAA APA

#	Activity	Risks/Problems Concerned	Element of law enforcement	Implementing parties
		communities		Partner organizations/donors
4.3	Ensure that law enforcement principles and activities recognize and account for tourism management and planning.	Inappropriate zoning with TPAC	Violation prevention	TPAA APA Partner organizations/donors

7.1 Work plan for the implementation of activities: 2011-12

#	Activity	2011				2012			
		I	II	III	IV	I	II	III	IV
1.1	Develop 2-3 month operational plans	x	x	x	x	x	x	x	x
1.2	Implement monthly patrol plans	x	x	x	x	x	x	x	x
1.3	Analyze patrol and intelligence data using GIS/MIST			x	x	x	x	x	x
1.4	Improve coordination and collaboration with other relevant entities			x	x	x	x	x	x
2.1	Increase number of rangers					x			
2.2	Implement ranger bonus scheme – encouragement of active rangers	x							
2.3	Implement scaled salary system based on qualification and length of service	x							
2.4	Develop a program of operational guideline with detailed SOPs	x	x	x					
2.5	Ranger trainings	x	x	x	x	x	x	x	X
2.6	Supply identified and prioritized equipment	x	x	x	x	x	x	x	x
2.7	Provide pier diems/food for rangers on patrol		x	x	x		x	x	x
2.8	Improvement in use of signage throughout the TPACC		x						
2.9	Develop and implement ranger exchange pilot program			x	x		x	x	
3.1	Advertise wildlife crime hot line among local population and tourists.		x	x	x	x	x	x	X
3.2	Mobilize community groups for search and removal operations in specific zones			x				x	
4.1	Ensure TPAC rezoning reflects law enforcement principles.	x							
4.2	Raise awareness of law enforcement issues (legislation, penalties etc.) amongst Tusheti and Pankisi gorge communities	x	x	x	x	x	x	x	X
4.3	Ensure that law enforcement principles and activities recognize and account for tourism management and planning.	x	x	x	x	x	x	x	X

Appendices

Appendix 1: Training requirements for TPAA staff

Group	Capacity need
Rangers	<ul style="list-style-type: none"> - ToR of ranger and the internal regulations of PA - Understanding the offender - Patrolling operations and procedures - Communication between rangers: field signals - Navigation (maps, compass and GPS) - Legislation and legal procedures (including AVFs) - Crime scene processing - Recording patrol data - Patrol tactical formations - Principles of communication with violator - First aid - Principles of communication with local communities - Physical trainings and normative values - Use of fire arms and shooting normative.
Senior Rangers (in addition to the above)	<ul style="list-style-type: none"> - Patrol planning, management and coordination - Processing patrol data - Reporting - Filing out AVFs - Fire prevention and liquidation
Head of Law Enforcement	<ul style="list-style-type: none"> - Developing operational plans in accordance to the current situation
Natural Recourse Specialist	<ul style="list-style-type: none"> - GIS - Data base management.

Appendix 2: Recommended outfit and additional infrastructure

Type of Equipment	Equipment	Required Quantity (for current number of rangers)
Field Equipment	GPS	10 units
	Camera	8 units
	Binoculars	14 units
	Uniforms (winter and summer)	2 sets to each ranger
	Flashlight	1 per ranger
	First aid kit	16 sets
	Maps	6 sets
	Boots	2 pairs (winter and summer) per ranger
	Fire fight equipment	2 sets
	Fire proof clothes	2 sets
	Horses	10 head
	Ranger ID	1 per ranger
	Knife	1 per ranger
Transport	4-wheel drive vehicle	5 units
	Quad bikes	5 units
Infrastructure	Completion of ranger station in Kvakhidi	1
	Additional ranger stations	2
Signage	Regulation signs	Assessment to quantify requirements needed
	Warning and information signs	
	Boundary signs	
	Boundary markers	
	Interpretation boards	

Appendix 3: An example of a bonus scheme based on outputs

I. General scheme:

The scheme described here should be made available to all rangers. The actual amount awarded as a bonus is equal to one month's salary and is generally given at the end of quarter. It should be related directly to a rangers achievements during that quarter. It should be noted that, during the TPAC winter season, ranger activity is much reduced and so it is reasonable to divide the "active" season (June-October) into periods.

General Conditions of bonus delivery

Level to which objectives are implemented for a given period (%)	Bonus amount
<50%	No Bonus
50%-75%	75 % of salary
>75%	100 % of salary

II. Objectives for given period

Rangers:

1. Complete AVFs – minimum 2
2. Recording patrol data
 - Data records on biodiversity during patrol
 - GPS data gathered every 2 hours along patrol route
 - Detailed report presented after patrol
3. Patrolling -Number of patrols performed (as compared to the planned)

Senior Rangers:

Develop monthly patrol plans and ensure their implementation,

Conduct monthly report.

For resource manager specialist:

Input patrol records into data base

Produce relevant maps (patrol routes, violation maps etc)and prepare recommendations

For head of law enforcement:

Deliver completed AVFs to court

III. Indicators for duty implementation:

- Quantity of prepared forms
- Court verdicts
- Monthly patrol plan
- Filled up patrol forms
- Monthly patrol reports

Appendix 4: Standard Operating Procedure for patrol preparation

Before each patrol, preparations must be made by the Patrol Team Leader as follows:

1. Patrol Team Leader gives a Briefing to Patrol group containing:
 - a. Mission Statement
 - b. Description of task
 - c. Description of Area
 - d. Background information of area (previous illegal activities, wildlife, trails etc.)
 - e. Assistance from outsiders (e.g. border police, EPU, etc.)
 - f. Execution
 - i. Roles of each patrol member
 - ii. Start point, time and transportation
 - iii. Patrol route
 - iv. What to monitor and record (wildlife, illegal activities)
 - v. End point, time and transportation
 - g. Actions On
 - i. Vehicle breakdown/accident
 - ii. Ranger/hunter injured
 - iii. Team or individual lost position
 - iv. Encounter poachers
 - v. Encounter dangerous animals
 - vi. Plus any "actions on" specific to that patrol
2. Rehearsal of any set law enforcement formations (e.g. takedowns)
3. Equipment Check:
 - a. Batteries, GPS, Torches, Camera + batteries, compass
 - b. Datasheets, notebook, AVFs, appropriate laws and maps, first aid kit
 - c. Camping equipment
 - d. Cooking equipment- pots, plates, and spoons
 - e. Food

Appendix 5: Recommended patrol routes and maps

a) Routes for wild goat protection

#	Routes	Risk	Season	Duration	resource	Remarks
1.	Omalo – Keseloebi – Kue -Tsiteli mta - Omalo (circular)	Hunting Snares	Spring/Autumn/Winter All year round	1 day	2 rangers, binoculars, GPS, cell phone , horses, camera, 1st aid kit, food Seasonal boots and uniform, snow shoes	Patrolling on foot is recommended.
2.	Omalo – Khakhabo –Omalo	Hunting Snares	Autumn/Spring	1 day	2 rangers, binoculars, GPS, cell phone, camera, 1st aid kit, food	Patrol intensity could vary On foot
3.	Omalo – Khakhabo – Gogrulta –Dochu – Bochora – Omalo.	Hunting Timber cutting	Spring – autumn	2 days	2 rangers, binoculars, GPS, cell phone, camera, 1 st aid kit, tent, horses, food	
4.	Shenako –Tusheti Alazani gorge – Dotkalti – Diklo –Shenako.	Hunting / illegal timber cutting Snares	Spring/Autumn/Winter All year round	1 day	2 rangers, binoculars, GPS, cell phone, camera, horses, 1st aid kit, food Seasonal boots and uniform, snow shoes	Diklo- Shenako district follows to a car road
5.	Dartlo – Chigo – Chigos Khaa – First shepherd house- Chigho Gele – Dartlo.	Hunting	Early Summer/Early autumn	3 days	2 rangers, horses, tents, binoculars, food, GPS, cell phone, camera, 1st aid kit, food	Patrolling can be conducted in 2 days

#	Routes	Risk	Season	Duration	resource	Remarks
6.	Omalo – Ighone – Kochorta – Vestmovake–Kumelaurta – Omalo.	Hunting Timber cutting	May–October.	3 days	2 rangers, horses, tent, food binocular, GPS, cell phone, camera, 1 st aid kit, food	Patrolling can be conducted in 2 days
7.	Omalo – Samkhevi – Bulancho- Alatovani – Samkhevi – Omalo.	Hunting	May–October.	2 days	2 rangers, Horses, tent, food, binoculars, GPS, cell phone, camera, 1 st aid kit	Cell phone coverage is limited

b) Routs for Tur protection

#	Route	Risk	Season	Duration	Resource	Remarks
8.	Dartlo –Chesho –Cheshos Khaa – Chesho- Dartlo	Hunting Illegal use of forest resources	May – October	2 days	2 rangers, horses, tent, food, binoculars, GPS, cell phone, camera, 1st aid kit.	Limited coverage of cell phone
9.	Dartlo- Larovani gorge –Kvakhidis Tskali gorge- Dartlo	Hunting	Summer/Autumn	3 days	2 rangers, horses, tent, food, binoculars, GPS, cell phone, camera 1st aid kit. Ranger shelter in Larovani (very basic structure)	Limited coverage of cell phone on most parts of road
10.	Omalo – Pinuri-Nartsapi-Larovni gorge- Samvronis pass- Tsovatis Tskali gorge- Omalo	Hunting	June- October	3 days	2 rangers, horses, tent, food, binoculars, GPS, cell phone, cell phone, camera, 1st aid kit.	Limited coverage of cell phone on most parts of road

#	Route	Risk	Season	Duration	Resource	Remarks
					Ranger shelter in Alaznistavi (very basic structure)	

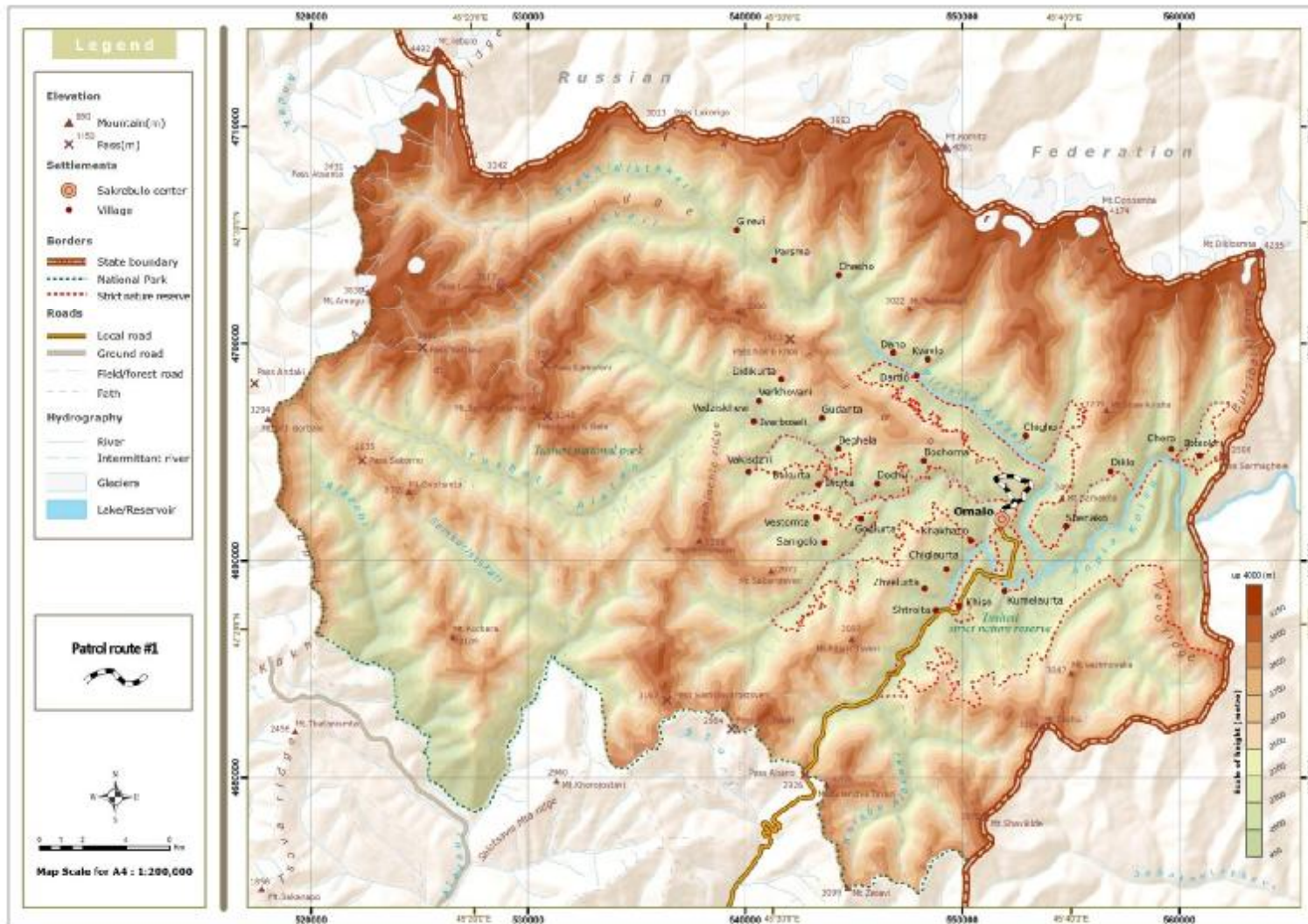
c) Estimated intensity of patrolling by months

Route	Patrol numbers						
	May	June	July	August	September	October	November
1	1	2	1	1	1	2	2
2	2	2	1	1	1	2	2
3	1	1	1	1	1	1	
4	2	2	2	2	2	2	1
5	1	2	3	3	2	1	
6	1	2	2	2	2	2	
7	1	2	2	2	3	2	
8	1	2	2	2	2	2	
9			1	1	1		
10	1	2	1	1	1	1	
Total	11	17	16	16	16	15	5

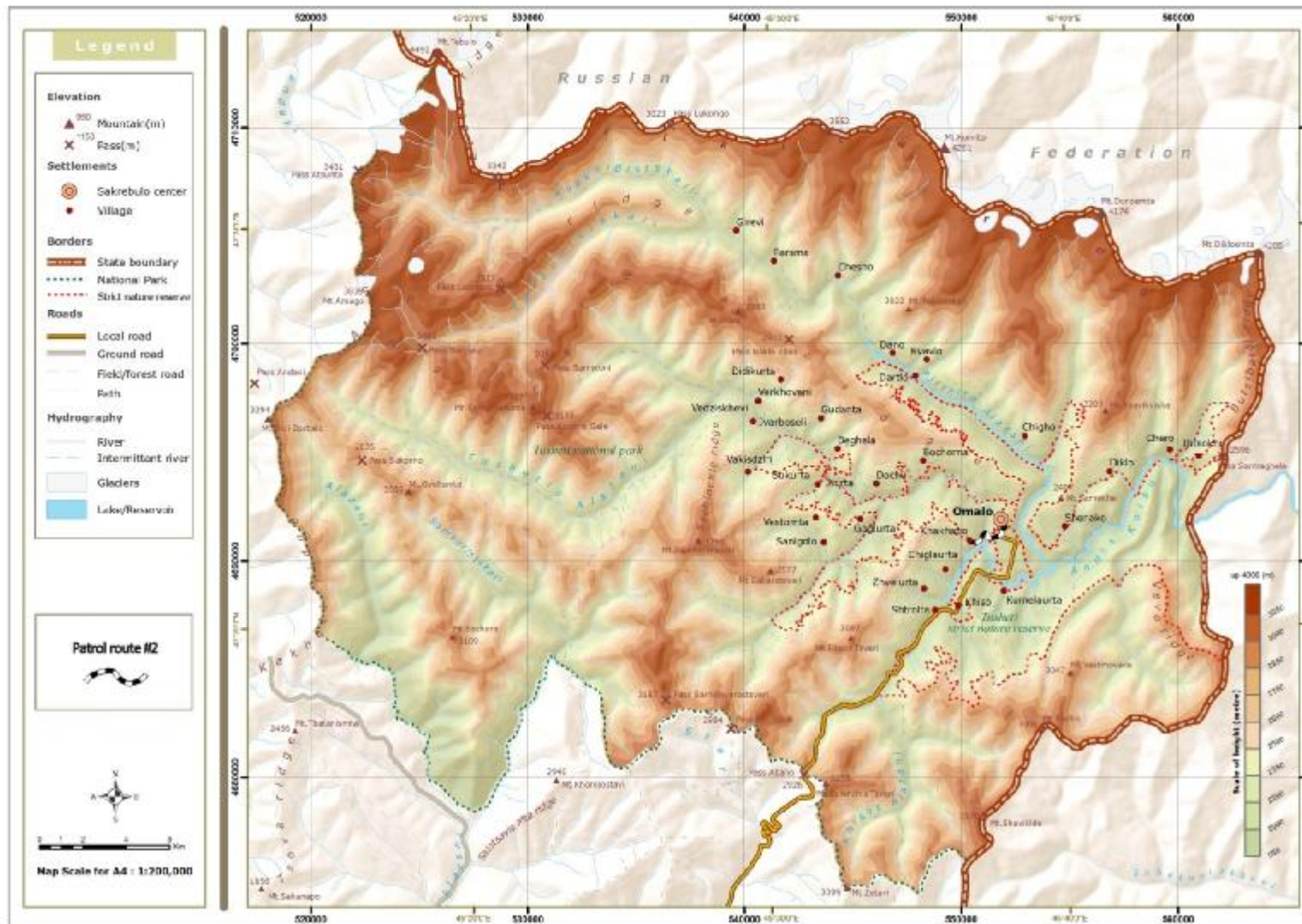
Route	Patrol days						
	May	June	July	August	September	October	November
1	1	2	1	1	1	2	2
2	2	2	1	1	1	2	2
3	2	2	2	2	2	2	
4	2	2	2	2	2	2	1
5	3	6	9	9	6	3	
6	3	6	6	6	6	6	
7	2	4	4	4	6	4	
8	2	4	4	4	4	6	
9			3	3	3		
10	3	6	3	3	3	3	
Total	20	34	35	35	34	30	5

e) Maps

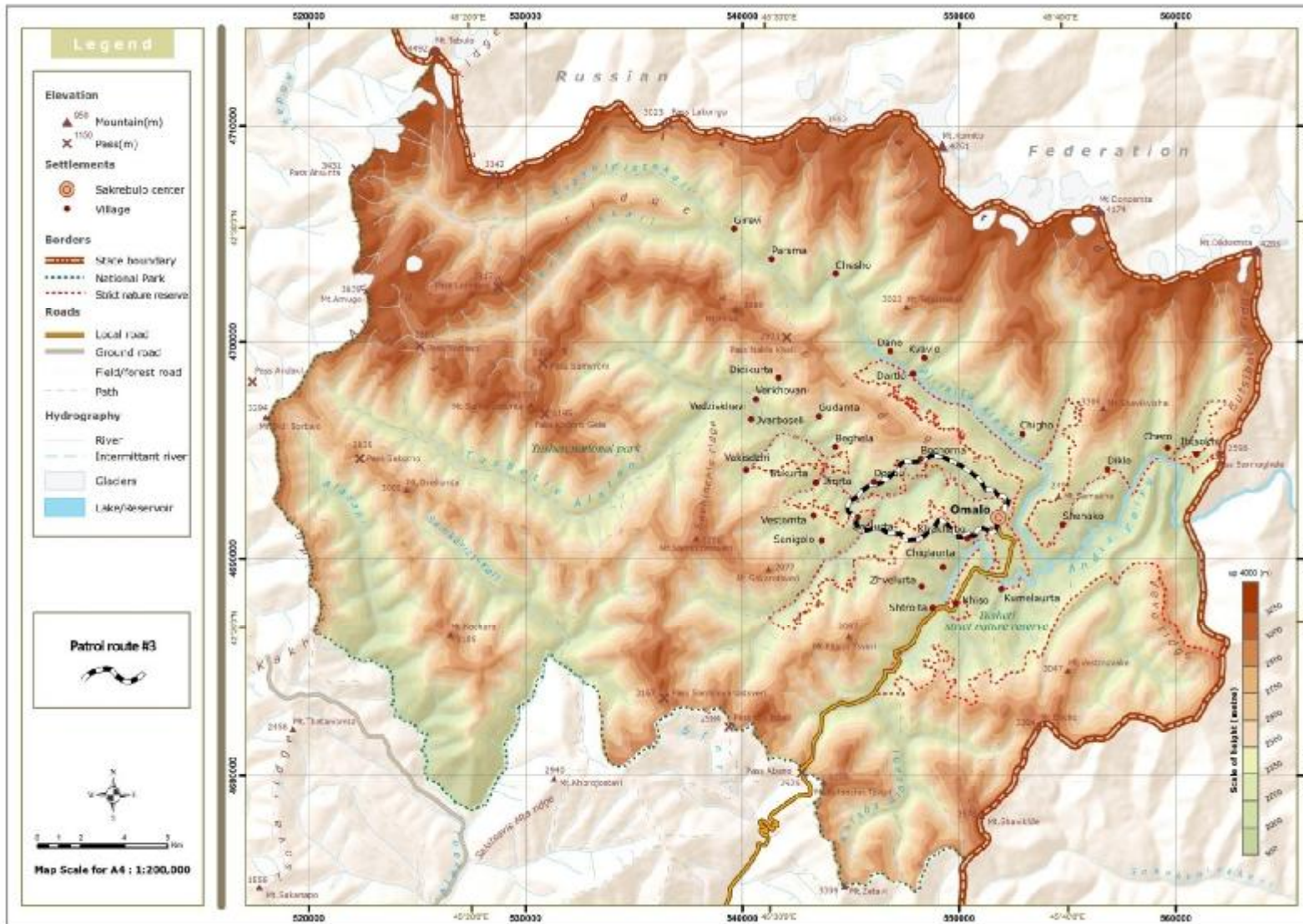
Patrol route #1: Omalo – Keseloebi – Kue -Tsiteli mta - Omalo (circular)



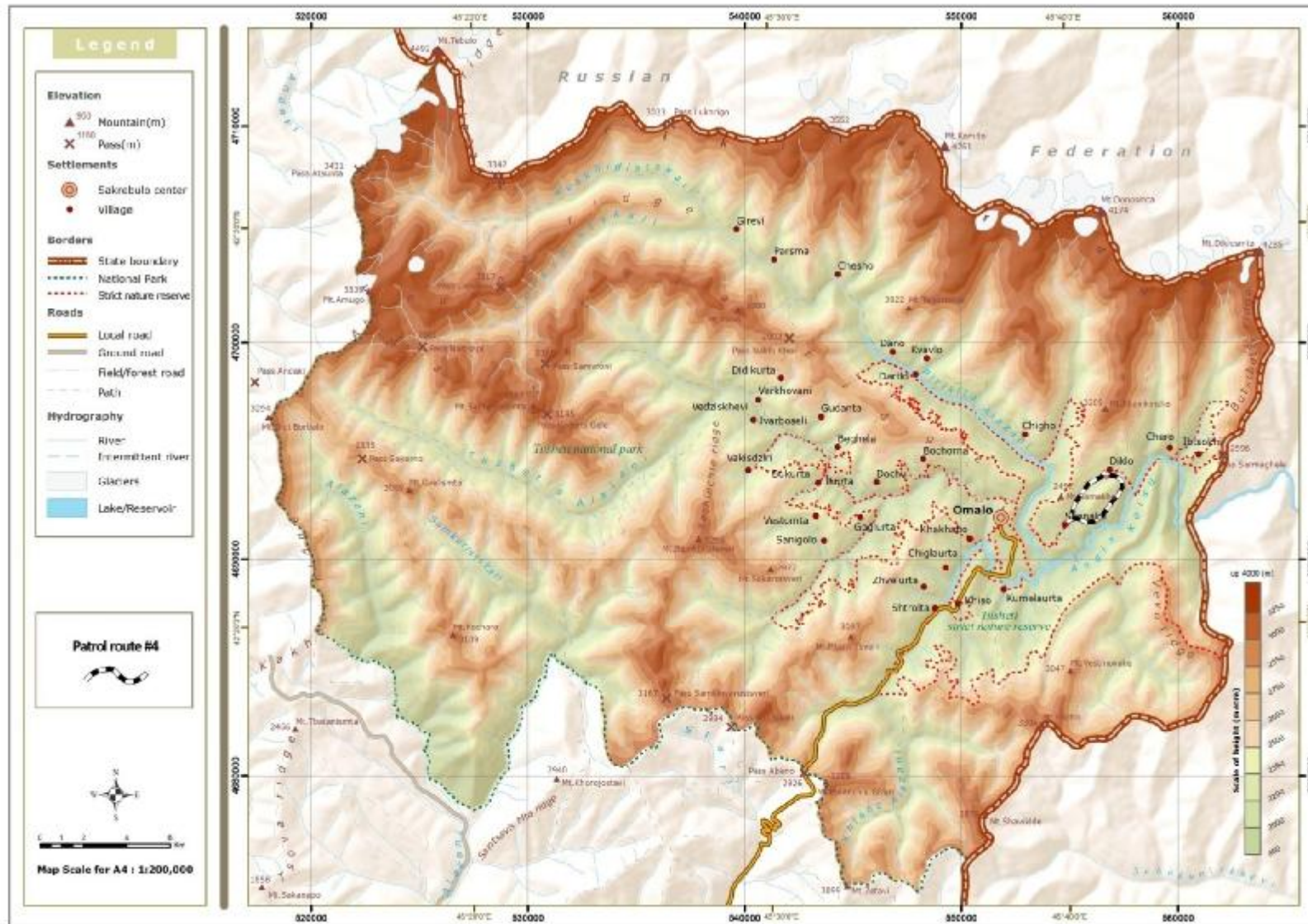
Patrol route #2: Omalo – Khakhabo –Omalo



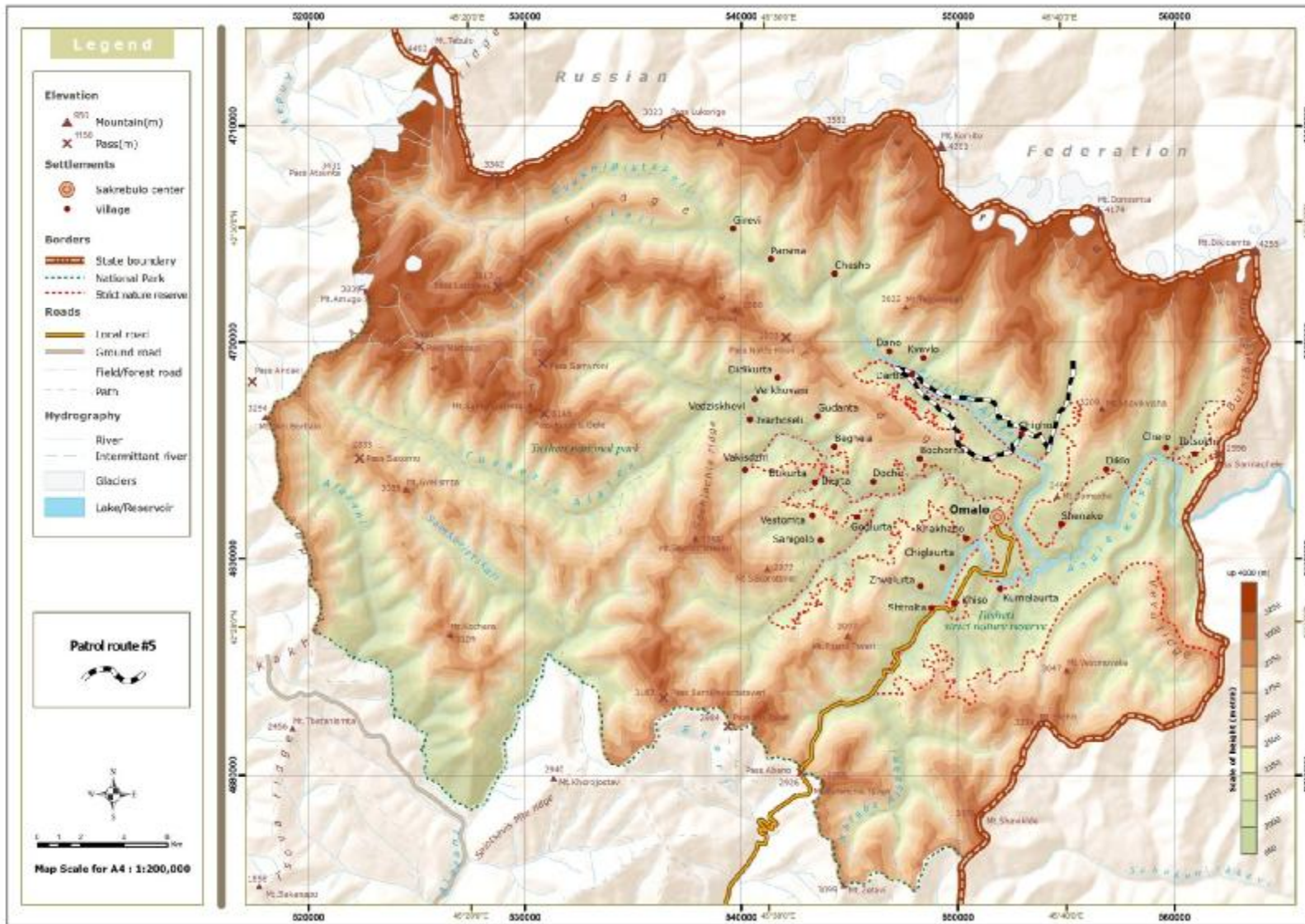
Patrol route #3: Omalo – Khakhabo – Gogruhta –Dochu –Bochorna – Omalo.



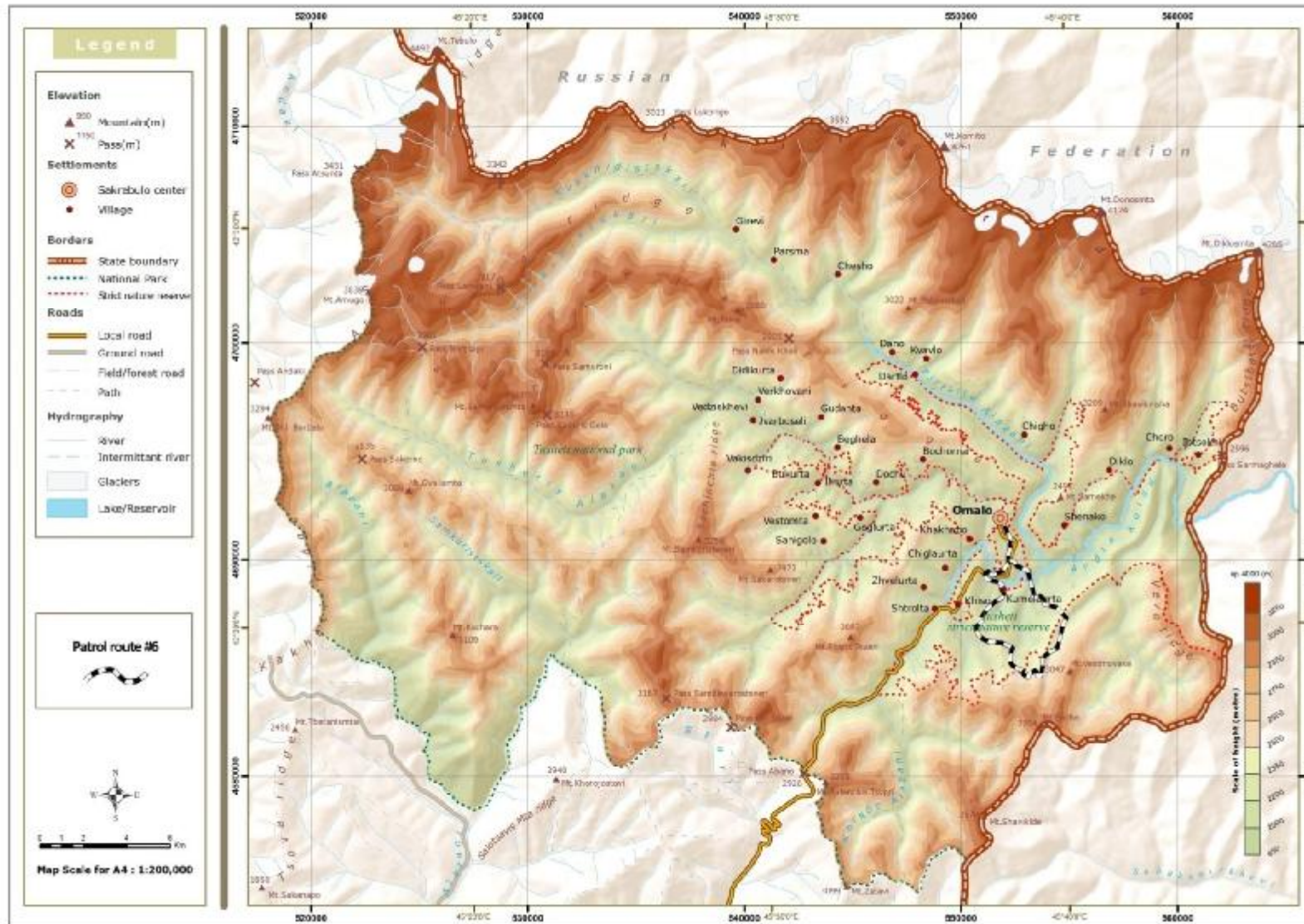
Patrol route #4: Shenako –Tusheti Alazani gorge – Dotkalti – Diklo –Shenako.



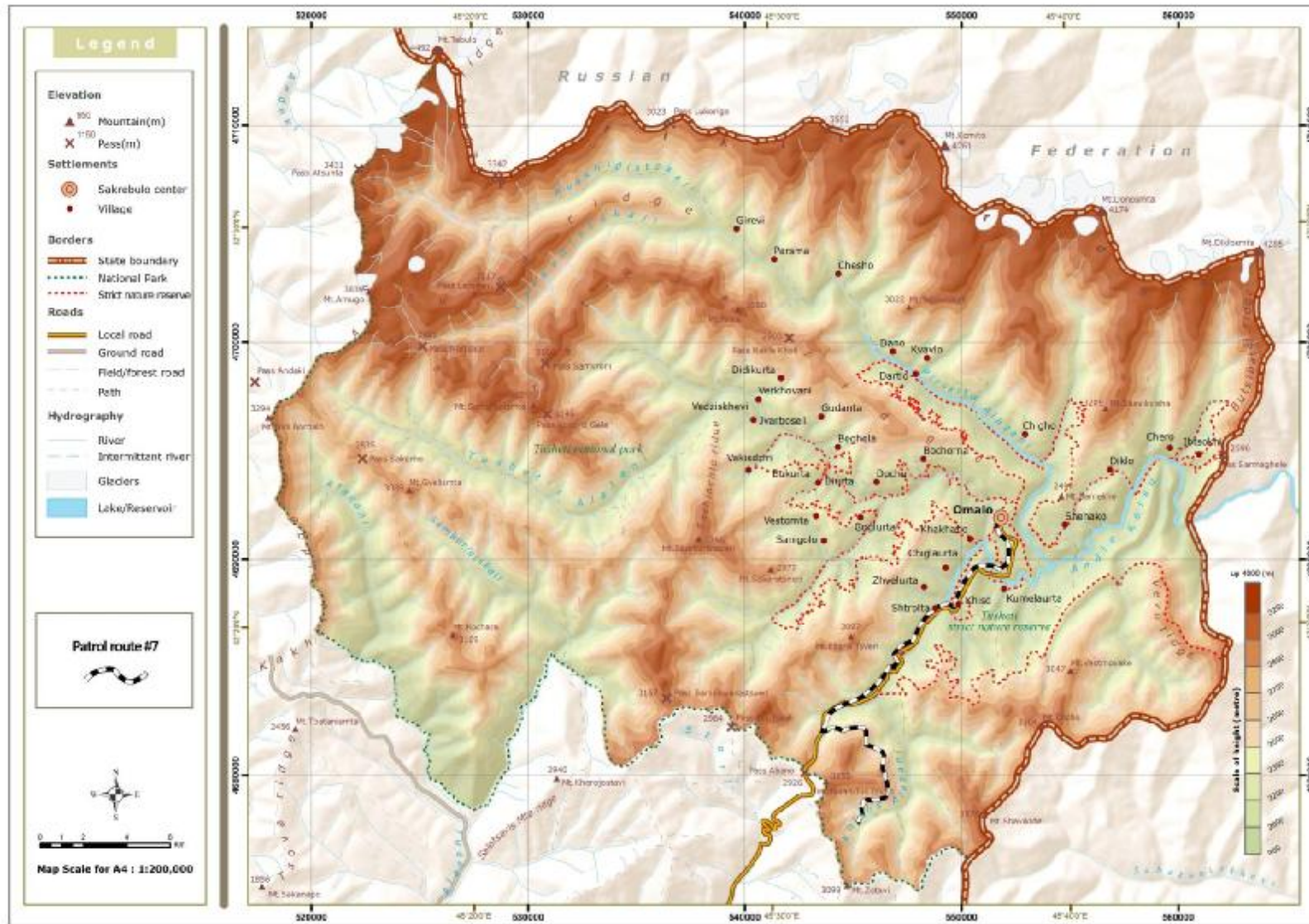
Patrol route #5: Dartlo – Chigo – Chigos Khaa – First shepherd house- Chigho Gele – Dartlo.



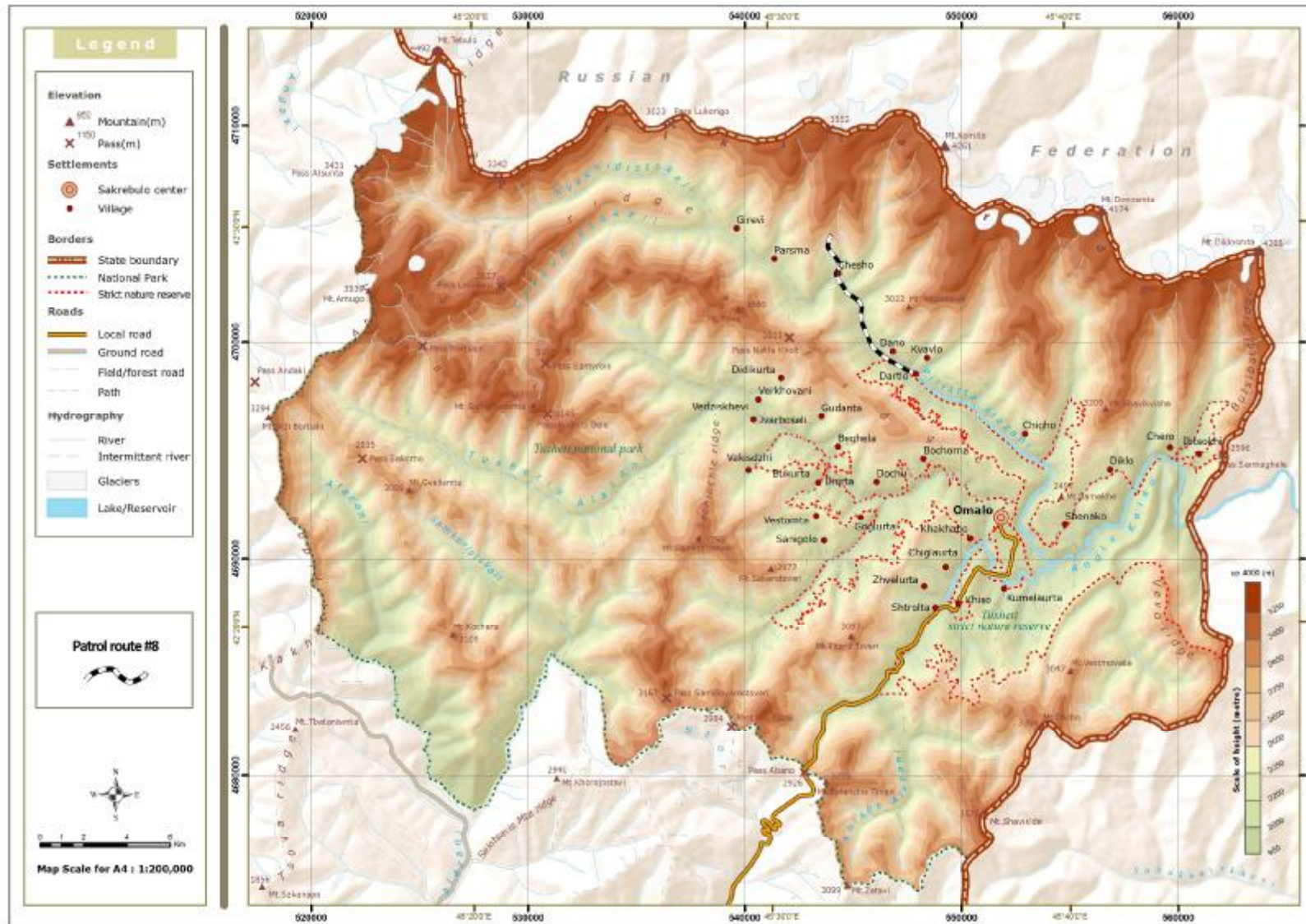
Patrol route #6: Omalo – Ighone – Kochorta – Vestmovake–Kumelaurta – Omalo.



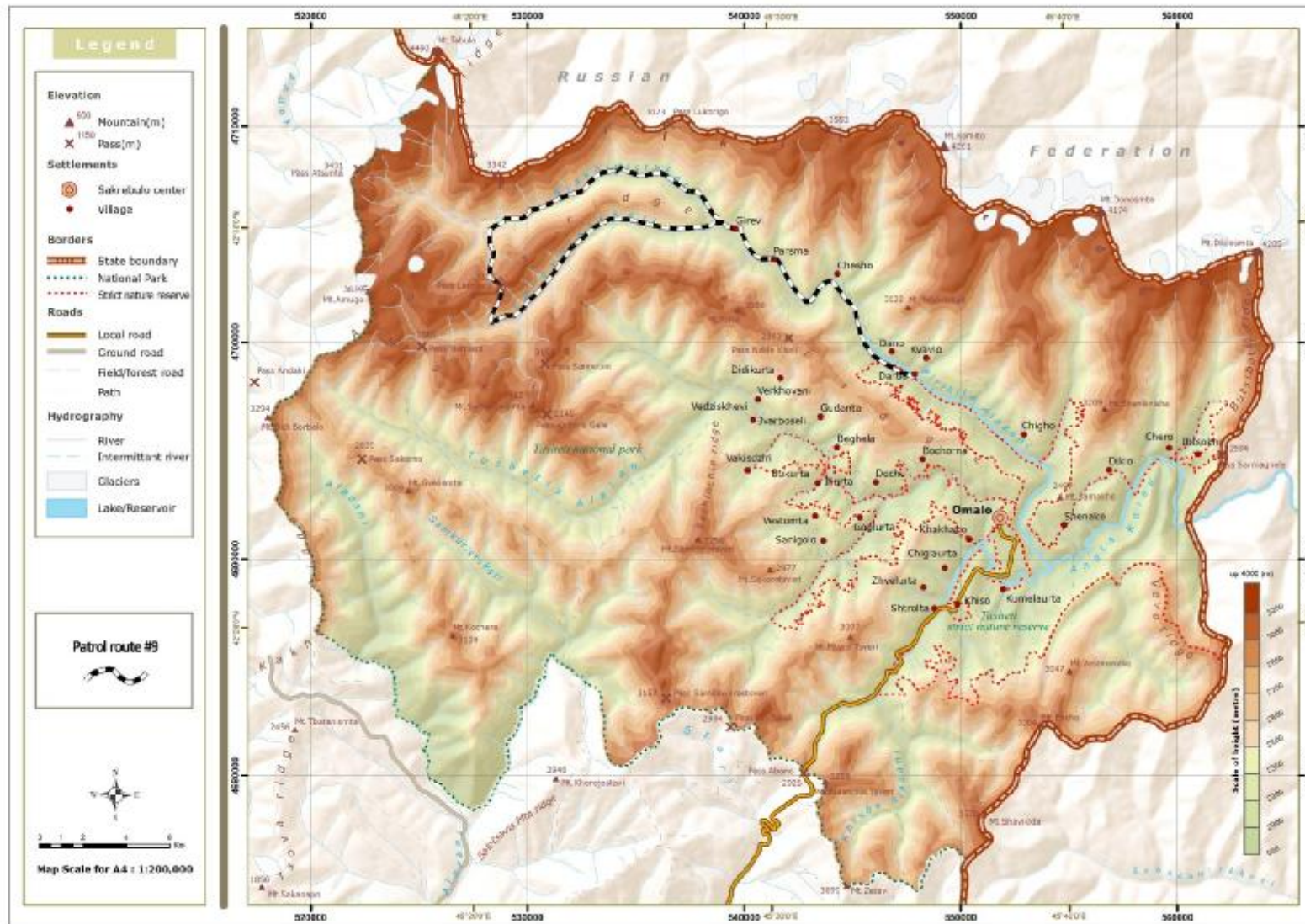
Patrol route #7: Omalo – Samkhevi – Bulancho- Alatovani – Samkhevi – Omalo.



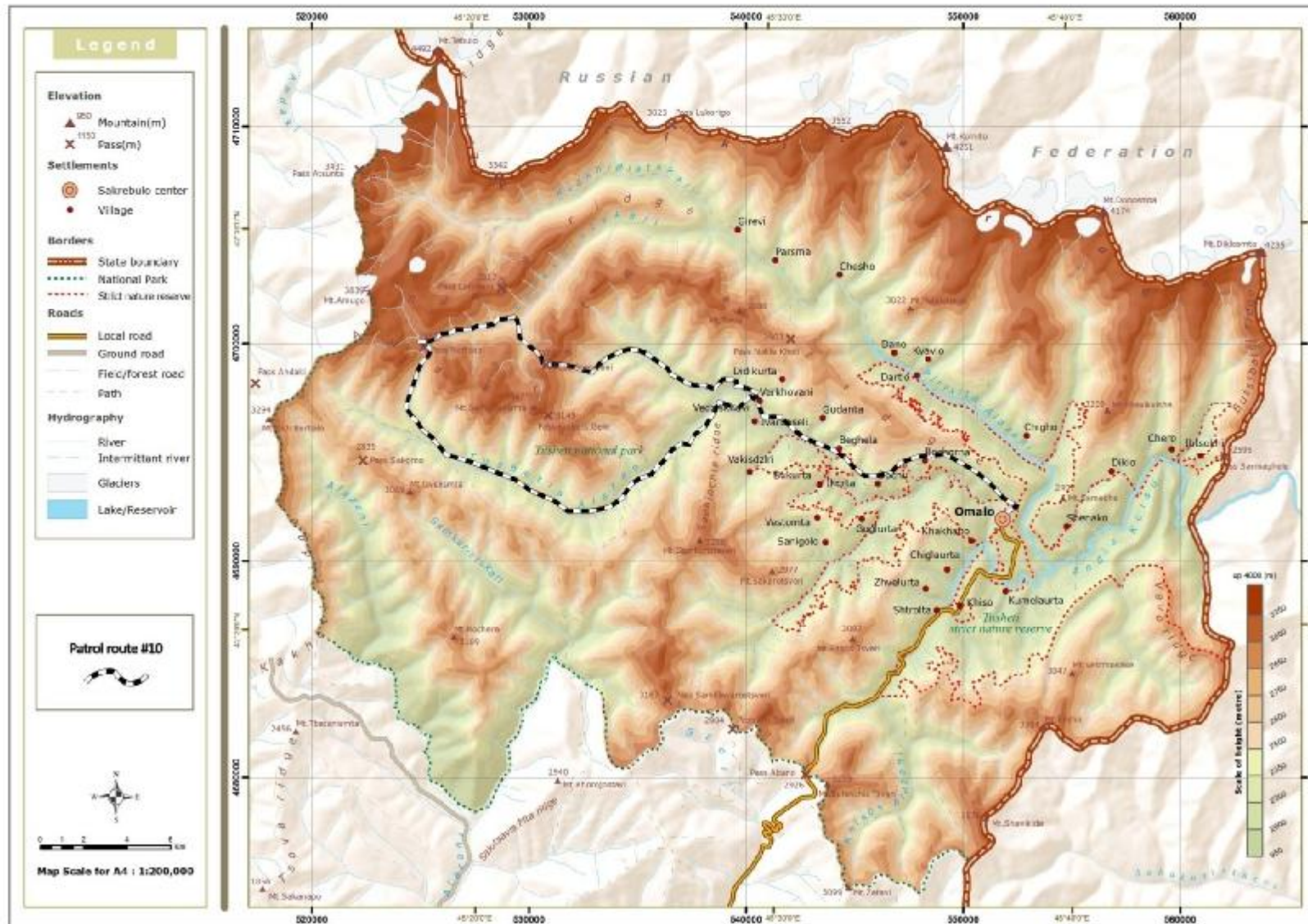
Patrol route #8: Dartlo –Chesho –Cheshos Khaa – Chesho- Dartlo



Patrol route #9: Dartlo- Larovani gorge –Kvakhidis Tskali gorge- Dartlo



Patrol route #10: Omalo – Pinuri-Nartsapi-Larovni gorge-Samvronis pass- Tsovatis Tskali gorge- Omalo



General map: all routes

