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APPENDICES

Appendix 4.16.1 Full Census of Seasonal Herders (2012)	
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4.16 Land Use and Tenure

The predominant land use within the Project area is permanent mountain pasture, or steppe grassland used for extensive summer grazing. The soils are generally shallow and nutrient poor, and the vegetation is subject to a relatively short growing season. These grasslands provide an important resource for summer grazing for cattle, horses, sheep and goats, leaving the hayfields at a lower elevation to produce fodder for winter feeding. Typically, hayfields will return to grazing in the later summer and autumn, once the hay crop has been removed.

4.16.1 Land Tenure

Four categories of land exist in Armenia:

- **Community land** – land owned and administered by the community, who hold full access rights over it and can rent it out at their discretion.
- **State land** – land owned by the State, which holds the administrative rights to rent the land out to the community. Applications for renting community land are decided by the community administration, with the decision-making process on renting State land following a strict hierarchical procedure outlined below in Figure 4.16.1.

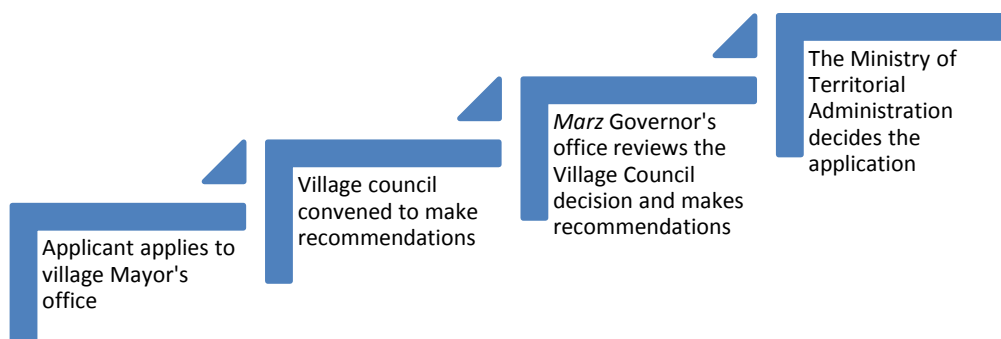


Figure 4.16.1: Decision Hierarchy for State Land

- **Legal ownership land** – land which may be owned and purchased by any individual or a legal entity.
- **Resident land** – land that can only be owned by an individual and not by a company or any other legal entity. The individual can use this land within the bounds of the land use and category that it was purchased under.

Prior to independence, most land was State owned. Privatisation of land began in 1991 when the Government redistributed some State land to households. Under this privatisation process, land ownership was awarded to households. Additional reform occurred in 2009 and 2010 when control over large tracts of State land was transferred to communities to promote economic development. Through this reform, communities gained the ability to rent out State land and retain rental payments within the community.

The majority of the land within the study area is defined as State land, although this is mainly due to the large State land holding in the community of Gorayk. Saravan and Gndevaz have less land and the land within their administrative boundaries is predominantly community land. Table 4.16.1 highlights the impact of the land privatisation process in the early 1990's where each household received 2 ha of land.

Land status	Gorayk	%	Saravan	%	Gndevaz	%	Jermuk	%
Community land	5,089.8	23.2	5,546.5	71.2	3,548.4	57.6	3,389.0	24.6
State land	14,927.2	67.9	1,776.4	22.8	2,028.8	32.9	9,422.1	68.5
Legal ownership land	10.9	< 1	0.1	< 1	-	-	-	-
Resident land	1,951	8.9	465.4	6.0	583.4	9.5	948.4	6.9
Total	21,978.9	100	7,788.4	100	6,160.5	100	13,760	100

Most users of the land in the study area rent access to the land on an annual basis. Rental agreements for pasture and hayfields appear to have little connection to geographical areas, with the renter gaining access to a broader area for the grazing season. Land rentals for pastures are normally for more extended time periods (3, 5, 10 or 25 years). The following groups of rural land users have been defined for the study area:

- Private land owners – a number of private land parcels exist within the study area.
- Community renters – local residents rent land from their community for agricultural purposes. This includes land rented close to their homes in the villages as well as grazing land distant from the village. These land agreements are monitored by both the community administrators and *Marz* officers.
- Community non-rent payers – includes local residents who use common land but do not pay for its use. While not officially endorsed, this practice is ongoing with the

administrators' knowledge. Reserve land is available in some areas for use by vulnerable groups, and residents of Saravan are understood to have access to land in this category.

- Temporary renters – residents of other urban and rural communities who rent land parcels in the study area. This includes some seasonal herders who may or may not have formal rent agreements; i.e. some herders make one-off payments, confirmed by receipts.
- Temporary non-rent payers – residents of other urban and rural communities who use land parcels in the study area but who do not pay rent. This group is known locally as the “illegal herders”. These herders are considered to have customary rights to the land.

4.16.2 National Land Categorisation

The Armenian land cadastre categorises all land according to its permitted use. Categories of land use include:

- Settlement;
- Agricultural;
- Industrial;
- For sub-soil use (minerals) and production;
- Energy;
- Transport;
- Communications;
- Public infrastructure;
- Specially protected areas;
- Special importance;
- Forestry;
- Water; and
- Reserved land.

Within the administrative boundaries of the rural communities in the study area, the majority of land is categorised as agricultural (Table 4.16.2). As an urban community, Jermuk has a different land categorisation profile from that of the rural communities.

Land category	Gorayk		Gndevaz		Saravan		Jermuk	
	ha	%	ha	%	ha	%	ha	%
Agricultural land	19521.99	88.82	5,727.0	92.96	6,402.3	82.2	4,734.7	34.4
Energy, Communications Transportation & Communal Infrastructure & other land	25.95	0.12	23.4	0.38	25.9	0.3	162.0	1.2
Forest land	-	-	29.2	0.47	274.8	3.5	4,072.9	29.6
Land for Industrial, Mining Industry and Other Industrial Objects	1659.64	7.55	336.2	5.46	1,012.3	13.0	112.3	0.8
Lands for Water and Hydro-technical Objects	750.90	3.42	21.5	0.35	43.1	0.6	181.7	1.3
Settlement Lands	12.26	0.06	16.6	0.27	17.0	0.2	148.9	1.1
Specially Protected Lands	8.10	0.04	6.5	0.11	13.1	0.2	4,347.0	31.6
Grand Total (ha)	21,978.9	100	6,160.5	100	7,788.4	100.0	13,759.5	100.0

The Armenian cadastre further sub-divides agricultural land categories into arable land, hayfields, other agricultural lands and pasture. The study area is predominantly categorised as pasture land (Table 4.16.3).

Land uses	Gndevaz		Gorayk		Saravan		Jermuk	
	ha	%	ha	%	ha	%	ha	%
Arable Lands	461.2	8.4	1727.8	8.9	381.8	6.0	624.4	9.3
Hayfields	115.6	2.1	858.4	4.4	402.6	6.3	535.1	7.9
Perennial plantings	-	-	-	-	-	-	-	-
Other agricultural lands	421.9	7.7	3324.8	17.1	1249.3	19.7	1249.3	18.6
Pastures	4501.1	81.8	13477.8	69.5	4323.2	68.0	4323.2	64.2
Agricultural land total	5499.7	100.0	19388.8	100.0	6356.9	100.0	6732.0	100.0

Changing land category requires central Government approval, including from the Ministry of Territorial Administration and Ministry of Nature Protection. Approval is not required to change the sub-category of land (e.g. from hayfields to pasture).

In June of 2013, Lydian completed a verification survey of the land categorisation in the administrative land within the permit area. This survey aimed to confirm that the land use categories identified by cadastre records were consistent with actual land use.

The survey confirmed that the large majority of land categorisation was accurate. Land categorisation, per the cadastre, is illustrated in Figure 4.16.2, integrating minor changes observed in the Lydian verification survey. In Gorayk and Jermuk, consultation with local authorities confirmed all cadastre classifications as correct. In Saravan there were a small number of plots that had a different actual use than the cadastre.

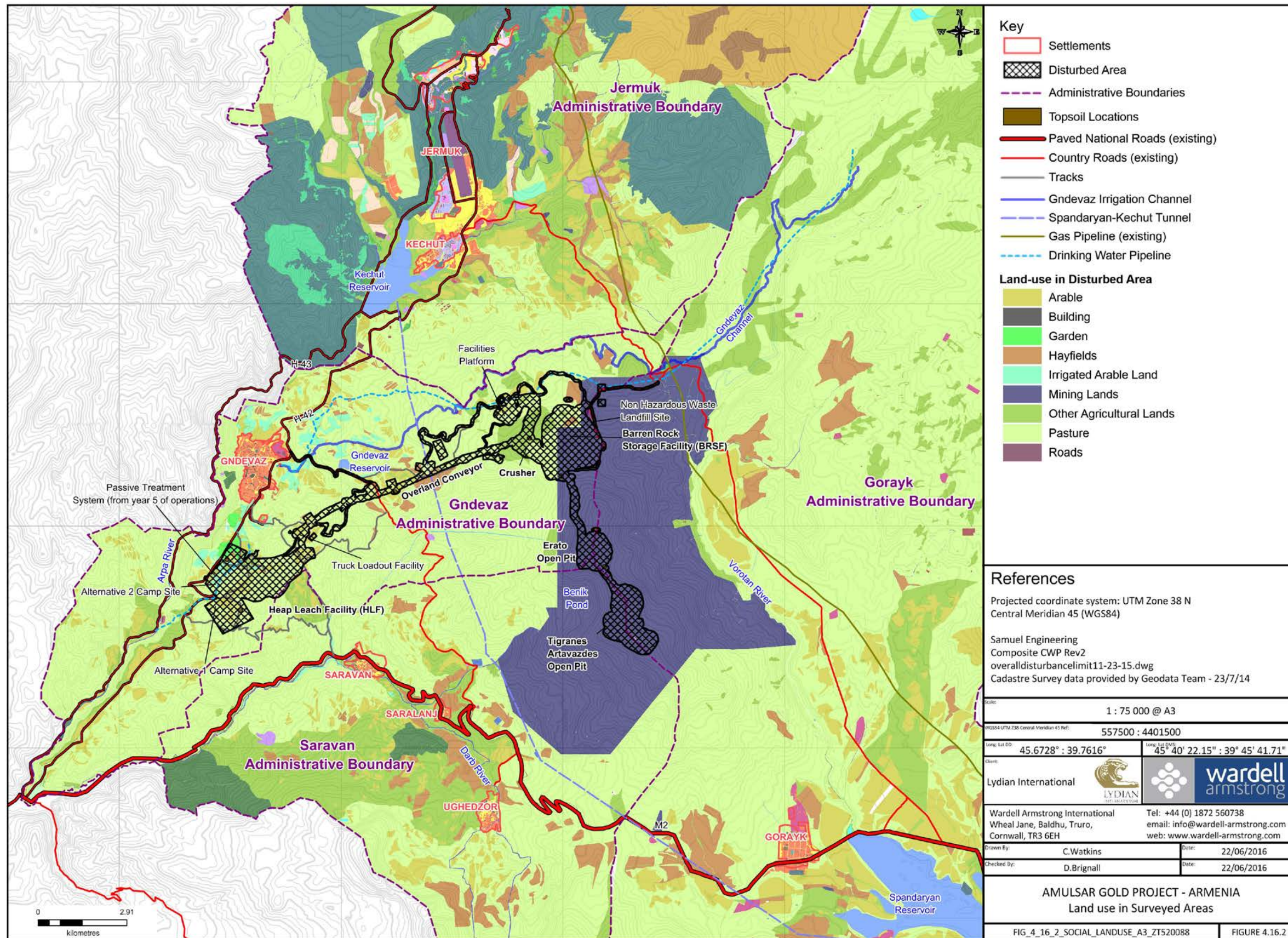


Figure 4.16.2: Land Use in Surveyed Area

4.16.3 Rural Land Use

Land use in the study area is dominated by cattle grazing activities. Because of the mobile nature of this activity and the disconnect between rental agreements and geographic constraints, it is difficult to define land use in the rural areas. Using remote sensing imagery, a visual assessment of land use in the study area estimated that 68% of the study area comprised grassland, with 9% classified as agricultural land (see Table 4.7.7). Visually it is difficult to recognise the difference between grassland and pasture, so it is likely that a significant proportion of the land use identified as grassland is used for pasture as well. There is also a degree of fluidity between pasture and hayfields, with local weather conditions dictating when grass dries out and is ready for hay making.

Animal grazing is the most visible activity in the rural lands in the study area during the summer months. Herding is undertaken by local herders as well as seasonal herders who originate from other areas in Armenia. Local herders typically return to their homes in the rural communities at the end of each day, while seasonal herders establish temporary residence in derelict buildings, caravans, tents or buses in the rural landscape. The locations of herders and the pastures they use (recorded through two separate surveys in 2012 as described in Section 4.11) are illustrated in 4.16.7. In addition to the temporary pastoral camps, a group of seasonal herders also use the seasonal village of Ughedzor for the summer months and graze their animals in close proximity to the village.

Based on a census conducted in September 2012, the total number of seasonal herders in the study area is 58 (see Appendix 4.16.1). The total number of herders within the Project licence area is considerably lower (approximately 20 herders, most of whom originate from the town of Xndzoresk). The length of time seasonal herders spend in the study area varies year upon year, controlled by the time of snow fall on the pasture. Most seasonal herders are present in the study area between June and September; Ughedzor-based herders continue working in the area until late October or early November.

The Mayors of the rural communities believe that pasture land in the area is currently under-utilised, with scope for increased density of animals. According to the findings of the Herder's field survey undertaken in 2012 by WAI, the best pasture land in the Gorayk administrative lands is located between 2,200 and 2,350 m above sea level, with land above 2,500 m only supporting sheep grazing (see Appendix 4.16.1).

Animal grazing and hay making are dominant summertime land-uses. In Gndevaz apricot cultivation is particularly important. People in all three villages engage in a variety of land-based activities to meet their livelihood needs.

The ethnobotany survey conducted in December 2011 identified a number of other land-based activities. Focus Group Discussions carried out for the Ecosystem Services Review in 2014 and 2015 also addressed these activities (see Chapter 6.20 for analysis of impacts on ecosystem services). They include:

- Foraging for mushrooms, rosehips, berries and a wide diversity of herbs in accessible hayfields, pastures and forested areas throughout the study area.
- Collecting dry wood from forested areas, particularly in Saravan, as a replacement or supplement for gas and electric central heating, as well as for household fuel use;
- Making honey for own use or for sale;
- Hunting and fishing are traditional recreational activities, practiced in the forested areas and the rivers and tributaries in the study area; and
- Walking trails in the forested parts of the study area are popular with tourists and visitors.

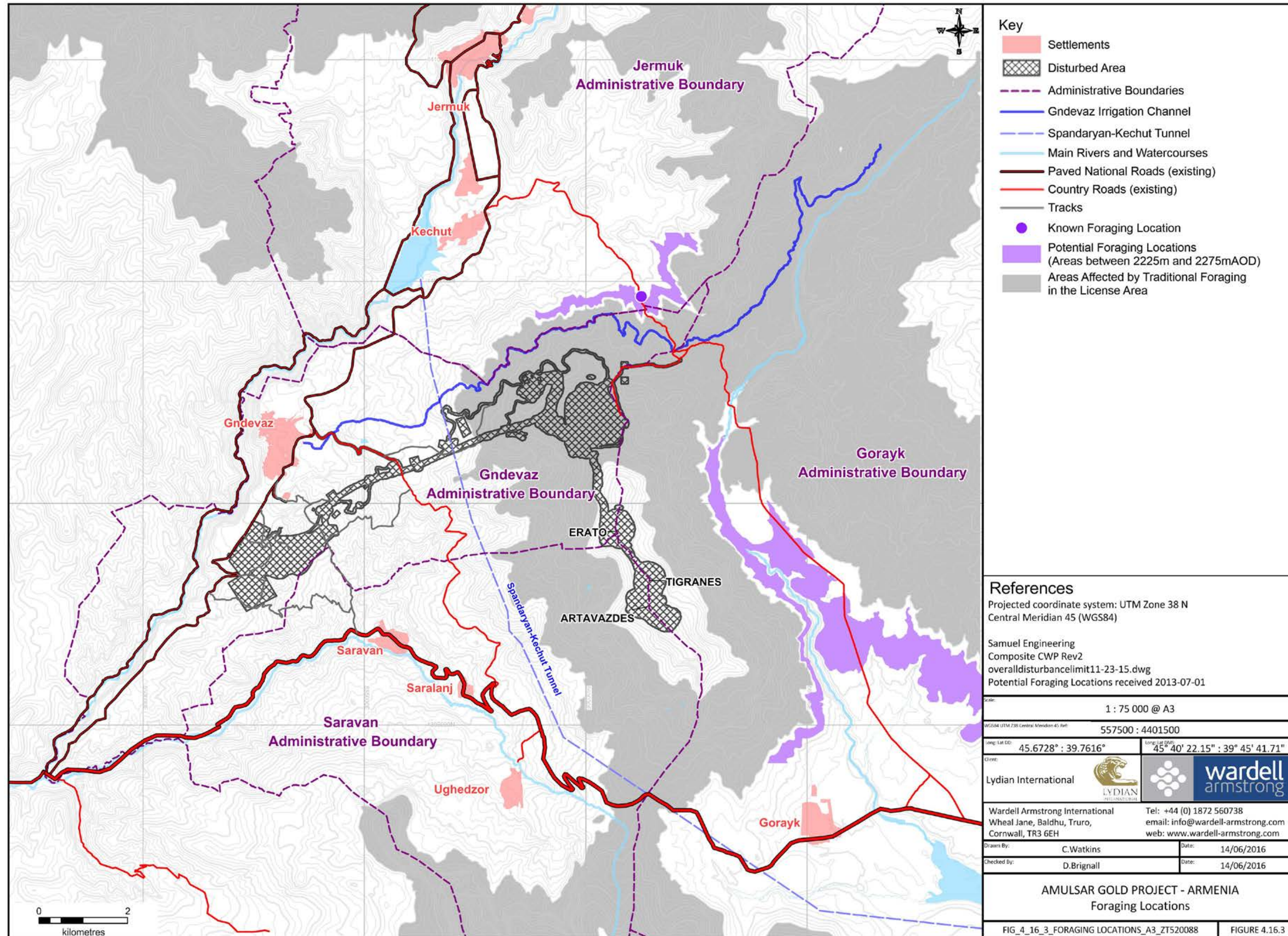


Figure 4.16.3: Foraging Locations