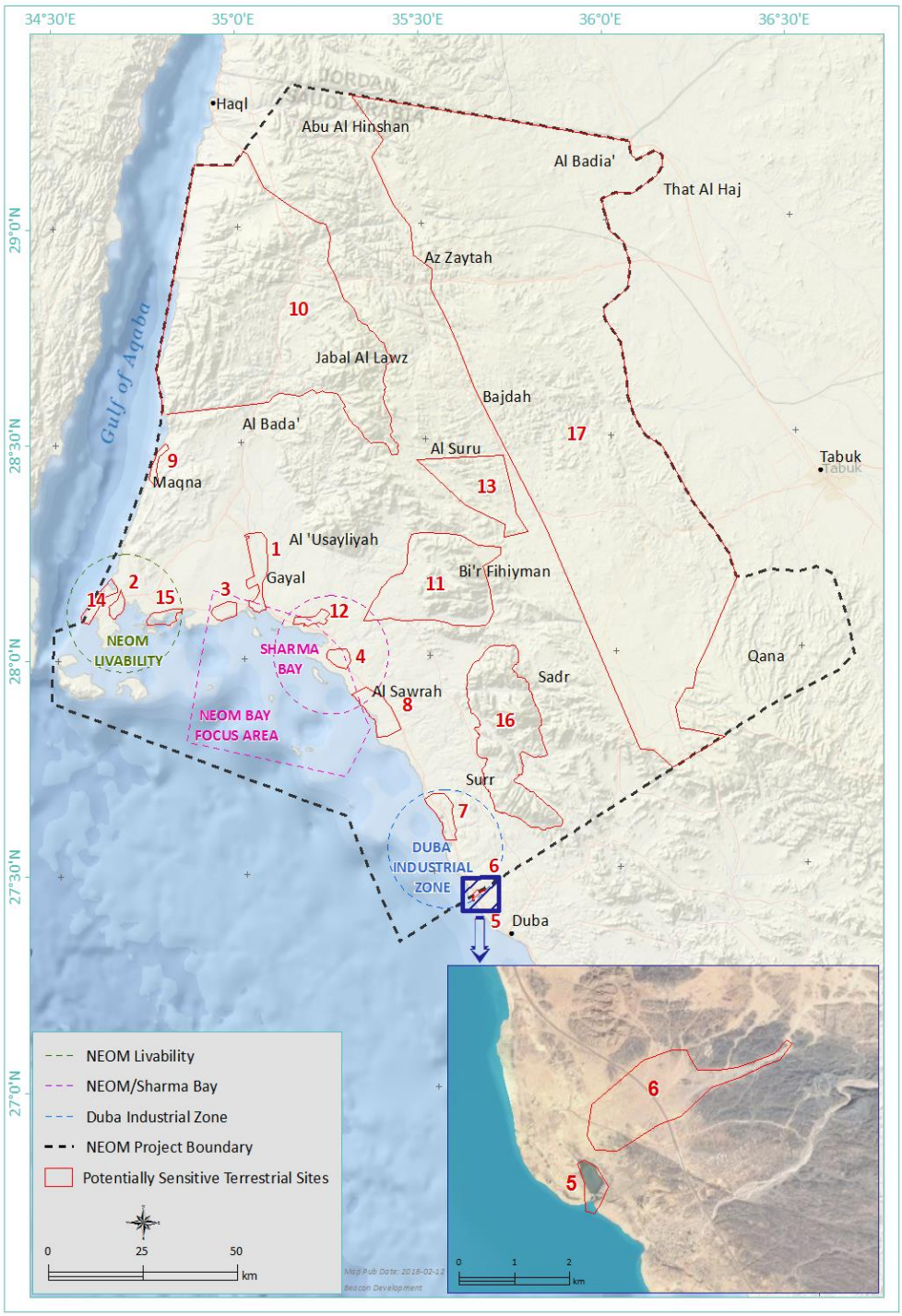

Figure 25 Draft map of potentially sensitive terrestrial vegetation communities

Table 3 Summary of Identified Sensitive Areas and Reasoning

Site No	Description	Value/Potential Value	Potential Threats
1	This near coastal site that stretches some 20 km inland is potentially of great interest due to *Hybaene thebaica* (doum palm) stands, *Acacia tortilis* woodland and dwarf scrub. It includes Wadi Gayal, which is an important site for raptors.	The size of this identified sensitive area is significant and the presence of the doum palm and woodland stands places the habitat type within one of the Saudi Arabian National Biodiversity strategies, namely to protect and develop woodlands. The indication that the site includes areas that are important to raptors indicates a relatively healthy ecosystem producing prey items for these top predators.	Damage to pattern of wadi flows, reduction of water supply to wadi gravels Overgrazing and off-road driving Hunting and wood cutting
2	A coastal section of Ra's Sheikh Al Hamid, is open and with very little vegetation.	Has potential for development and to provide local resource within proposed development zone. Could also function as a protection are to reduce storm surge risks and prevent erosion.	Redevelopment
3	There are extensive areas of coastal and near-coastal dwarf shrub vegetation, that in part at least appears to be in good condition. Such sites are generally also of ornithological and herpetological interest.	Provides support for range of species, most may be common but with the good vegetation cover and indications of good fauna such sites are valuable in providing a resource for future recreation projects. Such sites support local species with local genetic diversity.	Off road driving Change of hydrological patterns Cutting and hunting
4	There are likely to be large expanses of *Acacia tortilis* woodland and dwarf scrub with *Haloxylon salicornicum*. These communities are currently seriously degraded, but with proper management structures in place, their regeneration should be straightforward. As a keystone species, *Acacia tortilis* is crucial for supporting a host of fauna.	In line with SA Biodiversity Strategy of woodland protection, supports keystone species. Its coastal position and size make it valuable in soil stabilization.	Wood cutting Uncontrolled access Continued overgrazing
5	Of great interest due to the presence of mangroves (*Avicennia marina*) in the lagoon. This site lies within a broadcasting station and is fenced off. The mangroves	Lack of public access has protected site from disturbance. Such sites assist in coastal protection as well as having intrinsic nature conservation value. Mangroves is a much-	Increased access Changes in coastal morphology

Site No	Description	Value/Potential Value	Potential Threats
	observed are fairly dense and fringe a lagoon	depleted resource within Saudi Arabia coastlines.	Cutting
6	The mouth of the wadi on the coastal plain appears to support an area of *Acacia tortilis* woodland.	In line with SA Biodiversity Strategy of woodland protection, supports keystone species.	Cutting Changes to coastal processes and geomorphology
7	Area that includes mountain fronts, wadis, coastal plain and coastal lagoons, is of great conservation / ecotourism potential due to the range of habitats. It contains extensive, but likely degraded stands of *Acacia tortilis* woodland and *Hybaene thebaica* (doum palm)-groves. The coastline with its lagoons probably represents a good example of an area that could be developed for attracting large numbers of coastal birds. At present, the area is quite degraded especially north of the village.	An ecosystem that contains examples of the main habitats within this part of Saudi Arabia. This extends from high ground down to the interface of the land with the Red Sea. Includes habitats which are covered within the SA Biodiversity Strategy – woodland and rangeland. Coastal habitats may be important in providing protection from storm surges.	Increased access, severance of habitats Cutting and hunting Over grazing pressures
8	The coastal plain area is possibly of great conservation potential, as it lies to the west of the current main road. It contains natural coastline, dense coastal dwarf scrub vegetation, *Hybaene thebaica* (doum palm) stands, *Acacia tortilis* woodland and shallow vegetated wadis.	A rare example of relatively natural habitat along the coast line. Includes woodland which fall within the SA Biodiversity Strategy. Likely to support a range of local fauna.	Grazing Cutting Hunting
9	Contains typical coastal vegetation, interspersed with *Hybaene thebaica* (doum palm) groves. Dwarf scrub, both coastal and coastal plain types, is also present, along with the potential for a wind-deformed *Acacia tortilis* woodland.	Due to the presence of doum palm, the area is of biogeographical significance.	Cutting Disturbance
10	Potential Jebel Al-Lawz National Park; This large area includes the much smaller area proposed for protected by the SWA, and extends to the rocky western coast on the Gulf of Aqaba.	Identified sensitive area includes site designated as Important Bird Area and proposed designated site by Saudi Wildlife Authority. Its size, relative naturalness and	Increased access Cutting

Site No	Description	Value/Potential Value	Potential Threats
	Covers large stretches of land above 1,000 m, exceeding 2,000 m in places. Ideal for habitat restoration, re-introduction of Arabian leopard, etc. Towards the Gulf of Aqaba, this area also contains the relatively undisturbed Wadi Tayib Ism with its populations of partly endangered bird communities.	fragility make it an important but sensitive area. Has considerable potential for improvement.	Invasion by non-native species
11	Low to high mountain / plain, high-level plain potential protected area with extensive Acacia woodland, dwarf scrub vegetation. Probably excellent for mountain birds, possibly even for Arabia leopard re-introduction, as mountains exceed 2,000 m very locally. Also, it appears that quite extensive juniper stands could be present on the highest peaks.	SA Biodiversity Strategy habitat of woodland, good potential value for reintroductions and enhancement of site.	Hunting Cutting Increased access and disturbance
12	Includes Wadi Ainounah, comprises mountain fronts, wadis, coastal plain and traditional farmland. The area contains extensive but degraded stands of *Acacia tortilis* woodland and *Hybaene thebaica* (doum palm) – groves, and likely supports an avifauna community typical for the area. The site is partly protected in part by the SCTA. If managed and developed sympathetically, this could be a key area for ecotourism, taking into account its cultural heritage (formerly an important settlement, Leuke Kome) on the Incense Route. At present, the area is seriously degraded, contains much rubbish, and is not at all attractive for tourists.	Contains a mosaic of habitats typical of the region with increased interest through historical value of sites within the sensitive area. Contains woodland stands of keystone species and would fall within the SA Biodiversity Strategy requirement for protecting and developing woodland.	Uncontrolled access Cutting Hunting
13	Contains the scenic Wadi Al Bajdah. Altitude found between roughly 1,000 and 1,500 m is in part well-vegetated and is potentially of great biodiversity interest. The area would lend itself to carefully controlled ecotourism.	High mountain habitat which is in reasonable condition, such habitat is declining within Saudi Arabia. Contains key species and provide habitat for montane species.	Loss of junipers to disease Cutting Hunting Uncontrolled access

Site No	Description	Value/Potential Value	Potential Threats
14	Suggested as the location of a major coastal / migratory bird sanctuary. It contains extensive areas of salt marsh and several large coastal lagoons.	Salt marshes will act as a buffer between fully terrestrial areas and Red Sea, reducing storm surge risk on developed areas. Ecologically the site will be important for resident and migratory bird species. Developed and protected will form part of the complex of such sites along the flyway which are important for wading and water fowl during migration.	Hunting Changes in coastal geomorphology Pollution of sea water Uncontrolled access
15	Locally substantial patches of near-coastal halophytic scrub. The irregular coastline with numerous bays, lagoons etc. likely supports bird nesting and migration activity, as well as turtle nesting.	Provides coastal protection as well as having intrinsic biodiversity value. Possible presence of turtles which are endangered species.	Disturbance Uncontrolled access Changes in coastal geomorphology
16	This area corresponds to the Jebel Al-Dubbagh, which consists of three isolated granite massifs. This area has been proposed as a protected area by the SWA, and apart from its outstanding biodiversity value, offers breath taking scenery. Some of the key plant species (list by no means complete as referred to in Llewellyn (2013)) include: *Ephedra pachyclada* ssp. *sinaica*, *Globularia arabica* (possibly one of 2 sites in Saudi Arabia in which the species is recorded), *Juniperus phoenicea*, *Nepeta sheilae*, *Stachys aegyptiaca*, *Phlomis brachyodon* (one of 3 sites in Saudi Arabia in which the species has been recorded), *Pistacia* cf. *khinjuk*, *Scorzonera intricata* (the only site in Saudi Arabia from which the species has recorded), *Tulipa bliflora* (one of 2 sites in Saudi Arabia in which the species has been recorded). Important bird species include Lammergeier, Eurasian Griffon	Scenic value adds to intrinsic biodiversity value. Important site for plants, mammals and birds. Likely to have importance for reptiles.	Uncontrolled access, Cutting Hunting Persecution of animals

Site No	Description	Value/Potential Value	Potential Threats
	Vulture, Verreaux's Eagle, Lichtenstein's Sandgrouse and Crowned Sandgrouse; important mammals Nubian Ibex, Caracal, Honey Badger, Cape Hyrax and others. Two noteworthy agamids most probably occur in the area, namely *Laudakia stellio brachydactyla* and *Uromastyx ocellatus ornatus*. Data on fauna from Llewellyn (2013)[9].		
17	This is an area of major biodiversity significance as well as outstanding scenic beauty with its numerous sandstone. The area represents the extension of the World Heritage site "Wadi Rum" in Jordan, and Hisma is equally as impressive. The flora (Llewellyn, 2013) contains a number of very rare species, including *Silene corylina* (the only site in the Kingdom and *Leopoldia tenuiflorum* (one of only two known sites in the Kingdom). Faunistically, this area is of high significance. Small populations of Nubian Ibex have been recorded in the northern part of the area as well as Jibal Hawsal (in the east). Mountain Gazelle have also been reported in the northern part. Most importantly, it appears as if Arabian Leopard may still occur in the vicinity of Jebal al-Qusayb within the restricted border zone on the Saudi Arabian side. Other species reported include Rock Hyrax, Arabian Wolf, Striped Hyaena, Caracal and Indian Crested Porcupine (Llewellyn, 2013). Relatively little information is available on the he avifauna of Hisma, but it is one of the few sites in the Kingdom in which the threatened Lammergeier has	Possibly one of the last remaining areas in Saudi where higher predators may be found. Rare plant species. Loss or significant deterioration of this site would represent an effect at international level.	Uncontrolled access Animal and plant hunting Persecution of animals

[9] Llewellyn, O., (2013). The Protected Area System in the Kingdom of Saudi Arabia: Revised Plan (draft). Riyadh, Saudi Arabia: Saudi Wildlife Authority.

Site No	Description	Value/Potential Value	Potential Threats
	been recorded in recent years. It is apparently the most important site in the Kingdom for the Sinai Rosefinch. Other species recorded include Griffon Vulture, Egyptian Vulture and Chukar Partridge (Llewellyn, 2013). Virtually nothing is known about the reptile fauna of the /area.		

4.2.3. Jebel Al-Lawz And Al Zahar Rapid Assessment

Jabal al-Lawz is the highest mountain in north-western Saudi Arabia, and regularly receives snow in winter; Wadi Lakus, draining the eastern side of the mountain, contains perennial water. A survey of these areas was conducted from 28 October to 2 November 2017 (Figure 26).

The special biogeographical significance of the area is that it harbours a number of extremely rare plants that have survived since the last Ice Age only in the climatic refuge offered by these mountains and one or two other sites in the Kingdom (so-called “Pleistocene relicts”, mainly of Mediterranean and Irano-Turanian origin). These include the wild almond *Prunus korshinskyi* (from which the mountain range takes its name), *Atraphaxis spinosa Thymus decussatus, Tulipa biflora* and *Verbascum decaisneanum*. The summit area supports *Juniperus phoenicea*. Other species include *Pistacia khinjuk*, *Nepeta sheilae*, and the willow *Salix acmophylla*. *Retama raetam* is located common on the mountain, and grows particularly densely in the wadis. Due to its outstanding floristic value, Jebel Al-Lawz has been designated as an Important Plant Area.

Jabal Al-Lawz and the surrounding wadis are important wildlife sites, where a number of mammal species have been recorded. For example, a small population of Nubian Ibex, *Capra nubiana,* listed as Vulnerable on the IUCN Red List has been recorded on the mountain, as well as Rock Hyrax, *Procavia capensis* and Arabian Wolf, *Canis lupus arabs*. Bird species of conservation concern recorded from this mountain are mentioned in the next section.

4.2.4. Terrestrial Fauna including Birds

Historical data from various sources suggest a total of 86 bird species observed in the region. During BDC rapid assessments 58 species were recorded of which 41 are considered to be breeding and 17 are non-breeding species (

Table 4).