

Table S1. The coordinated and elevation of the studied stands along Wadi Hargan, Saudi Arabia.

Stands	N	E	Elevation (m.a.s.l.)
1	25°03.975	46°10.802	824
2	25°03.972	46°10.815	822
3	25°03.944	46°10.824	816
4	25°03.923	46°10.852	812
5	25°03.890	46°10.897	810
6	25°03.842	46°10.882	811
7	25°03.884	46°10.993	806
8	25°03.856	46°11.108	803
9	25°03.880	46°11.246	803
10	25°03.871	46°11.362	804
11	25°03.859	46°11.488	806
12	25°03.727	46°11.649	804
13	25°03.725	46°11.770	797
14	25°03.719	46°11.972	797
15	25°03.742	46°12.157	797

Table S2. The floristic analysis of the recorded plant species in the study area.

Species	Family	Life Span	Life Form	Chorotype
<i>Aaronsohnia factorovskyi</i> Warb. & Eig	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Acacia ehrenbergiana</i> Hayne	Fabaceae	Perennial	Phanerophytes	Saharo-Arabian Sudano-Zambezian
<i>Acacia gerrardii</i> Benth.	Fabaceae	Perennial	Phanerophyte	Sudanian-African
<i>Acacia tortilis</i> (Forssk.) Hayne	Mimosaceae	Perennial	Phanerophyte	Sudanian
<i>Achillea fragrantissima</i> (Forssk.) Sch.Bip.	Asteraceae	Perennial	Hemicryptophyte	Irano-Turanian - Saharo-Arabian
<i>Adiantum capillus-veneris</i> L.	Adiantaceae	Perennial	Hemicryptophyte	Euro-Siberian - Med - Irano-Turanian
<i>Aeluropus lagopoides</i> (L.) Thwaites	Poaceae	Perennial	Hemicryptophyte	Irano-Turanian - Saharo-Arabian
<i>Alhagi graecorum</i> Boiss.	Papilionaceae	Perennial	Hemicryptophyte	Med - Irano-Turanian
<i>Anagallis arvensis</i> L.	Primulaceae	Annual	Therophyte	Euro-Siberian - Med - Irano-Turanian
<i>Anisosciadium lanatum</i> Boiss.	Apiaceae	Annual	Therophyte	Saharo-Arabian
<i>Anthemis deserti</i> Boiss.	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Anvillea garcinii</i> (Burm.f.) DC.	Asteraceae	Annual	Chamaephyte	Saharo-Arabian
<i>Artemisia monosperma</i> Delile	Asteraceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Artemisia pycnocephala</i> (Less.) DC.	Asteraceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Artemisia sieberi</i> Besser	Asteraceae	Perennial	Chamaephyte	Irano-Turanian
<i>Asphodelus tenuifolius</i> Cav.	Liliaceae	Annual	Therophyte	Saharo-Arabian - Sudanian
<i>Asteriscus pygmaeus</i> (DC.) Coss. & Durieu	Asteraceae	Annual	Therophyte	Mediterranean
<i>Astragalus spinosus</i> (Forssk.) Muschl.	Papilionaceae	Perennial	Chamaephyte	Irano-Turanian
<i>Atriplex leucoclada</i> Boiss.	Chenopodiaceae	Perennial	Chamaephyte	Irano-Turanian - Saharo-Arabian
<i>Avena sterilis</i> L.	Poaceae	Annual	Therophyte	Med - Irano-Turanian
<i>Bassia eriophora</i> (Schrad.) Asch.	Chenopodiaceae	Annual	Therophyte	Saharo-Arabian - Sudanian

<i>Blepharis ciliaris</i> (L.) B.L.Burt	Acanthaceae	Perennial	Chamaephyte	Irano-Turanian - Saharo-Arabian
<i>Calendula tripterocarpa</i> Rupr.	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Cenchrus ciliaris</i> L.	Poaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Chenopodium murale</i> L.	Chenopodiaceae	Annual	Therophyte	Plurireginalbor-trop
<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae	Perennial	Hemicryptophyte	Saharo-Arabian
<i>Cucumis prophetarum</i> L.	Cucurbitaceae	Perennial	Hemicryptophyte	Saharo-Arabian
<i>Cuscuta planiflora</i> Ten.	Convolvulaceae	Annual	Parasite	Med - Saharo-Arabian
<i>Cymbopogon commutatus</i> (Steud.) Stapf	Poaceae	Perennial	Hemicryptophyte	Saharo-Arabian
<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Perennial	Hemicryptophyte	Plurireginalbor-trop
<i>Diploaxis acris</i> (Forssk.) Boiss.	Brassicaceae	Annual	Therophyte	Saharo-Arabian
<i>Diploaxis harra</i> (Forssk.) Boiss.	Brassicaceae	Annual	Chamaephyte	Saharo-Arabian
<i>Ducrosia anethifolia</i> (DC.) Boiss.	Apiaceae	Annual	Hemicryptophyte	Irano-Turanian
<i>Echinops spinosus</i> L.	Asteraceae	Perennial	Chamaephyte	Mediterranean
<i>Eclipta prostrata</i> (L.) L.	Asteraceae	Annual	Therophyte	Subtropical -Tropical
<i>Emex spinosa</i> (L.) Campd.	Polygonaceae	Annual	Therophyte	Mediterranean
<i>Ephedra foliata</i> Boiss. ex C.A.Mey.	Ephedraceae	Perennial	Phanerophyte	Sudanian
<i>Eragrostis minor</i> Host	Poaceae	Annual	Therophyte	Euro-Siberian - Med - Irano-Turanian
<i>Erodium laciniatum</i> (Cav.) Willd.	Geraniaceae	Annual	Therophyte	Mediterranean
<i>Euphorbia prostrata</i> Aiton	Euphorbiaceae	Annual	Therophyte	Med - Irano-Turanian
<i>Fagonia bruguieri</i> DC.	Zygophyllaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Farsetia aegyptia</i> Turra	Brassicaceae	Perennial	Chamaephyte	Sudanian
<i>Ficus salicifolia</i> Vahl	Moraceae	Perennial	Phanerophyte	Sudanian
<i>Filago desertorum</i> Pomel	Asteraceae	Annual	Therophyte	Irano-Turanian - Saharo-Arabian
<i>Frankenia pulverulenta</i> L.	Frankeniaceae	Annual	Therophyte	Euro-Siberian - Med - Irano-Turanian
<i>Gymnocarpus decandrus</i> Forssk.	Caryophyllaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Haloxylon salicornicum</i> (Moq.) Bunge ex Boiss.	Chenopodiaceae	Perennial	Chamaephyte	Sudanian
<i>Helianthemum lippii</i> (L.) Dum.Cours.	Cistaceae	Perennial	Chamaephyte	Saharo-Arabian - Sudanian
<i>Heliotropium ramosissimum</i> (Lehm.) Sieber ex DC.	Boraginaceae	Annual	Therophyte	Saharo-Arabian - Sudanian
<i>Hordeum murinum</i> L.	Poaceae	Annual	Therophyte	Med - Irano-Turanian
<i>Hyparrhenia hirta</i> (L.) Stapf	Poaceae	Perennial	Hemicryptophyte	Med - Irano-Turanian - Saharo-Arabian
<i>Ifloga ruepellii</i> (L.) Druce	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Ifloga spicata</i> (Forssk.) Sch.Bip.	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Juncus rigidus</i> Desf.	Juncaceae	Perennial	Geophytes	Irano-Turanian - Saharo-Arabian
<i>Koelpinia linearis</i> Pall.	Asteraceae	Annual	Therophyte	Irano-Turanian - Saharo-Arabian
<i>Launaea angustifolia</i> (Desf.) Kuntze	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Launaea capitata</i> (Spreng.) Dandy	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Launaea mucronata</i> (Forssk.) Muschl.	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Lolium multiflorum</i> Lam.	Poaceae	Annual	Hemicryptophyte	Euro-Siberian - Med - Irano-Turanian
<i>Lomelosia porphyraeura</i> (Blakelock) Greuter & Burdet	Dipsacaceae	Annual	Therophyte	Irano-Turanian - Saharo-Arabian

<i>Lycium shawii</i> Roem. & Schult.	Solanaceae	Perennial	Phanerophyte	Saharo-Arabian - Sudanian
<i>Malva parviflora</i> L.	Malvaceae	Annual	Therophyte	Med - Irano-Turanian
<i>Matthiola longipetala</i> (Vent.) DC.	Brassicaceae	Annual	Therophyte	Med - Irano-Turanian
<i>Medicago laciniata</i> (L.) Mill.	Papilionaceae	Annual	Therophyte	Saharo-Arabian
<i>Moricandia sinaica</i> (Boiss.) Boiss.	Brassicaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Ochradenus baccatus</i> Delile	Resedaceae	Perennial	Phanerophyte	Sudanian-African
<i>Panicum turgidum</i> Forssk.	Poaceae	Perennial	Chamaephyte	Saharo-Arabian - Sudanian
<i>Paronychia arabica</i> (L.) DC.	Caryophyllaceae	Annual	Hemicryptophyte	Saharo-Arabian
<i>Pennisetum divisum</i> (Forssk. ex J.F.Gmel.) Henrard	Poaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Pergularia tomentosa</i> L.	Asclepiadaceae	Perennial	Chamaephyte	Sudanian
<i>Phalaris minor</i> Retz.	Poaceae	Annual	Ephemeral	Med - Irano-Turanian
<i>Phoenix dactylifera</i> L.	Arecaceae	Perennial	Phanerophyte	Saharo-Arabian
<i>Phragmites australis</i> (Cav.) Trin. ex Steud.	Poaceae	Perennial	Hemicryptophyte	Plurireginalbor-trop
<i>Picris babylonica</i> Hand.-Mazz.	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Picris cyanocarpa</i> Boiss.	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Plantago ciliata</i> Desf.	Plantaginaceae	Annual	Therophyte	Saharo-Arabian
<i>Plantago coronopus</i> L.	Plantaginaceae	Annual	Therophyte	Euro-Siberian - Med - Irano-Turanian
<i>Plantago ovata</i> Forssk.	Plantaginaceae	Annual	Therophyte	Irano-Turanian - Saharo-Arabian
<i>Polygonum equisetiforme</i> Sm.	Polygonaceae	Perennial	Hemicryptophyte	Med - Saharo-Arabian
<i>Polypogon monsepliensis</i> (L.) Desf.	Poaceae	Annual	Ephemeral	Med - Irano-Turanian - Saharo-Arabian
<i>Polytrichum juniperinum</i> Hedw.	Polytrichaceae			Saharo-Arabian
<i>Prosopis farcta</i> (Banks & Sol.) J.F.Macbr.	Mimosaceae	Perennial	Phanerophyte	Irano-Turanian
<i>Pulicaria undulata</i> (L.) C.A.Mey.	Asteraceae	Perennial	Chamaephyte	Saharo-Arabian - Sudanian
<i>Reichardia tingitana</i> (L.) Roth	Asteraceae	Annual	Therophyte	Med - Irano-Turanian
<i>Reseda muricata</i> C.Presl	Resedaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Rhanterium epapposum</i> Oliv.	Asteraceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Rhazya stricta</i> Decne.	Apocynaceae	Perennial	Phanerophyte	Saharo-Arabian - Sudanian
<i>Rumex vesicarius</i> L.	Polygonaceae	Annual	Therophyte	Saharo-Arabian
<i>Salvia spinosa</i> L.	Lamiaceae	Annual	Hemicryptophyte	Irano-Turanian
<i>Savignya parviflora</i> (Delile) Webb	Brassicaceae	Annual	Therophyte	Saharo-Arabian
<i>Schismus barbatus</i> (L.) Thell.	Poaceae	Annual	Ephemeral	Irano-Turanian - Saharo-Arabian
<i>Scirpoides holoschoenus</i> (L.) Soják	Cyperaceae	Perennial	Helophyte	Med - Irano-Turanian
<i>Sclerocephalus arabicus</i> Boiss.	Caryophyllaceae	Annual	Therophyte	Saharo-Arabian
<i>Scrophularia deserti</i> Delile	Scrophulariaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Senecio flavus</i> (Decne.) Sch.Bip.	Asteraceae	Annual	Therophyte	Saharo-Arabian
<i>Senecio glaucus</i> L.	Asteraceae	Annual	Therophyte	Irano-Turanian - Saharo-Arabian
<i>Setaria verticillata</i> (L.) P.Beauv.	Poaceae	Annual	Ephemeral	Plurireginalbor-trop
<i>Sisymbrium irio</i> L.	Brassicaceae	Annual	Therophyte	Med - Irano-Turanian
<i>Spergula fallax</i> (Lowe) E.H.L.Krause	Caryophyllaceae	Annual	Therophyte	Saharo-Arabian
<i>Spergularia diandra</i> (Guss.) Heldr.	Caryophyllaceae	Annual	Therophyte	Med - Irano-Turanian - Saharo-Arabian

<i>Stipa capensis</i> Thunb.	Poaceae	Annual	Ephemeral	Irano-Turanian - Saharo-Arabian
<i>Stipagrostis plumose</i> Munro ex T.Anderson	Poaceae	Perennial	Hemicryptophyte	Irano-Turanian - Saharo-Arabian
<i>Tamarix nilotica</i> (Ehrenb.) Bunge	Tamaricaceae	Perennial	Phanerophyte	Saharo-Arabian
<i>Teucrium oliverianum</i> Ging. ex Benth.	Lamiaceae	Annual	Hemicryptophyte	Irano-Turanian
<i>Teucrium polium</i> L.	Lamiaceae	Perennial	Chamaephyte	Med - Irano-Turanian
<i>Trigonella hamosa</i> Del. ex Smith	Papilionaceae	Annual	Therophyte	Sudanian
<i>Trigonella stellata</i> Forssk.	Papilionaceae	Annual	Therophyte	Saharo-Arabian
<i>Typha domingensis</i> Pers.	Typhaceae	Perennial	Helophyte	Med - Irano-Turanian - Saharo-Arabian
<i>Xanthium strumarium</i> L.	Asteraceae	Annual	Therophyte	Plurireginalbor-trop
<i>Zilla spinosa</i> (L.) Prantl	Brassicaceae	Perennial	Chamaephyte	Saharo-Arabian
<i>Zygophyllum coccineum</i> L.	Zygophyllaceae	Perennial	Chamaephyte	Saharo-Arabian
