

# Hedysarum flexuosum

**NT**

Taxonomic Authority: L.

 Global Assessment  Regional Assessment

Region: Global

 Endemic to region

## Upper Level Taxonomy

Kingdom: PLANTAE

Phylum: TRACHEOPHYTA

Class: MAGNOLIOPSIDA

Order: FABALES

Family: LEGUMINOSAE

## Lower Level Taxonomy

Rank:

Infra- rank name:

 Plant Hybrid

Subpopulation:

Authority:

## General Information

### Distribution

Hedysarum flexuosum is found in Algeria, Morocco, Portugal, Spain and Tunisia however according to Kamotho et al. (2008) this taxon has experience a decline in northern African. There suggest that H. flexuosum is no longer found in Tunisia and is restricted to 'small, isolated pockets in Morocco and Algeria'.

### Range Size

Area of Occupancy:

Extent of Occurrence:

Map Status:

### Elevation

Upper limit:

Lower limit:

### Depth

Upper limit:

Lower limit:

### Depth Zones

 Shallow photic  Bathyl  Hadal Photic  Abyssal

### Biogeographic Realm

 Afrotropical Antarctic Australasian Neotropical Oceanian Palearctic Indomalayan Nearctic

### Population

There is no specific information relating to the population size of this taxon, however the taxon is considered to be in decline in northern Africa.

### Total Population Size

Minimum Population Size:

Maximum Population Size:

### Habitat and Ecology

H. flexuosum is often found on clay soils, in Mediterranean bushland, thicket and grasslands.

### System

 Terrestrial  Freshwater Marine

### Movement pattern

 Nomadic  Congregatory/Dispersive Migratory  Altitudinally migrant

### Crop Wild Relative

 Is the species a wild relative of a crop?

| <u>Growth From</u> | <u>Definition</u>   |
|--------------------|---|
| Annual             | An annual plant, also termed a Therophyte                           |
| Forb or Herb       | Biennial or perennial herbaceous plant, also termed a Hemicytophyte |

### Threats

The areas where *H. flexuosum* occurs have been heavily influenced by human activities including urban development, agriculture, quarrying and other industries including tourism. Plasticulture is leading to habitat loss in southern Spain. These anthropogenic activities have led to habitat loss and fragmentation. Intense drought associated with climatic changes poses a threat to Mediterranean thickets and bush land. According to Kamothe et al. (2008) the dry African grassland habitat is under increasing pressure from anthropogenic activities. In particular grazing, cultivation and to an extent urbanization is leading to genetic erosion.

|  | Past                     | Present                             | Future                   |
|--|--------------------------|-------------------------------------|--------------------------|
| 1 Habitat Loss/Degradation (human induced) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 1.1 Agriculture                            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 1.1.1 Crops                                | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 1.1.4 Livestock                            | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 1.4 Infrastructure development             | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 1.4.2 Human settlement                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 13 None                                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### Conservation Measures

There are no conservation measures that specifically relate to *H. flexuosum*, however it is known to occur in Los Alcornocales Natural Park in Spain. Seeds have yet to be collected as a method of ex-situ conservation.

|   | In Place                            | Needed                              |
|---|-------------------------------------|-------------------------------------|
| 3 Research actions                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3.2 Population numbers and range            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3.4 Habitat status                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3.5 Threats                                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3.6 Uses and harvest levels                 | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3.8 Conservation measures                   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3.9 Trends/Monitoring                       | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 4 Habitat and site-based actions            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.4 Protected areas                         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.4.1 Identification of new protected areas | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4.4.3 Management                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 Species-based actions                     | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5.7 Ex situ conservation actions            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5.7.2 Genome resource bank                  | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

### Countries of Occurrence

|          | PRESENCE                            |                          |                          |                          |                          |                          |                          | ORIGIN                              |                          |                          |                          |                          |
|----------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|          | Year Round                          | Breeding Season only     | Non-breeding season only | Passage migrant          | Possibly extinct         | Extinct                  | Presence uncertain       | Native                              | Introduced               | Re-Introduced            | Vagrant                  | Origin uncertain         |
| Algeria  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Morocco  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Portugal | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Spain    | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tunisia  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| General Habitats                                      | Score | Description | Major Importance |
|---|-------|-------------|------------------|
| 3 Shrubland   | 1     | Suitable    | Unset            |
| 3.8 Shrubland - Mediterranean-type Shrubby Vegetation | 1     | Suitable    | Unset            |
| 4 Grassland   | 1     | Suitable    | Unset            |
| 4.4 Grassland - Temperate                             | 1     | Suitable    | Unset            |

## Species Utilisation

Species is not utilised at all

Trend in the level of wild offtake/harvest in relation to total wild population numbers over the last five years:

Trend in the amount of offtake/harvest produced through domestication/cultivation over the last five years:

CITES status: Not listed

## IUCN Red Listing

Red List Assessment: (using 2001 IUCN system) Near Threatened (NT)

Red List Criteria:

Date Last Seen (only for EX, EW or Possibly EX species):

Is the species Possibly Extinct?  Possibly Extinct Candidate?

### Rationale for the Red List Assessment

*H. flexuosum* is relatively widespread along the Mediterranean coast in southern Spain and Portugal, but apparently diminished in northern Africa. The taxon is known to be subject to anthropogenic pressure as a result of grazing, crop cultivation and urbanisation. The taxon does not qualify for a threatened category under criterion B, however due to the known decline in population size and stability in northern Africa this taxon is listed as Near Threatened. More research is required to probably assess the size of the sub populations of this taxon and the relative stability of the populations in Spain and Portugal.

Reason(s) for Change in Red List Category from the Previous Assessment:

- |  |  |   |   |
|--|--|---|---|
| <input type="checkbox"/> Genuine Change <ul style="list-style-type: none"> <li><input type="checkbox"/> Genuine (recent)</li> <li><input type="checkbox"/> Genuine (since first assessment)</li> </ul> | <input type="checkbox"/> Nongenuine Change <ul style="list-style-type: none"> <li><input type="checkbox"/> New information</li> <li><input type="checkbox"/> Knowledge of Criteria</li> <li><input type="checkbox"/> Incorrect data used previously</li> </ul> | <input type="checkbox"/> No Change <ul style="list-style-type: none"> <li><input type="checkbox"/> Taxonomy</li> <li><input type="checkbox"/> Criteria Revisio</li> <li><input type="checkbox"/> Other</li> </ul> | <input type="checkbox"/> No Change <ul style="list-style-type: none"> <li><input type="checkbox"/> Same category and criteria</li> <li><input type="checkbox"/> Same category but change in criteria</li> </ul> |
|--|--|---|---|

Current Population Trend: Decreasing

Date of Assessment: 23/06/2010

Name(s) of the Assessor(s): Groom, A.

Evaluator(s):

Notes:

% population decline in the past:

Time period over which the past decline has been measured for applying Criterion A or C1 (in years or generations):

% population decline in the future:

Time period over which the future decline has been measured for applying Criterion A or C1 (in years or generations):

Number of Locations:

Severely Fragmented:

Number of Mature Individuals:

## Bibliography

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