

# The PGR Forum Crop Wild Relative Information System (CWRIS): Information management for crop wild relatives illustrated with case studies

S.P. Kell, M. Scholten, N. Maxted, J. Moore, J. Iriondo, A. Asdal, L. Frese, J. Labokas and Z. Stehno


## Purpose of CWRIS

The PGR Forum Crop Wild Relative Information System (CWRIS) is an online information management system specifically designed to facilitate CWR conservation and use. CWRIS has two main dimensions: the CWR Catalogue for Europe and the Mediterranean, containing more than 23,000 species and in excess of 243,000 distribution records, and the CWR descriptors for management of taxon data, including detailed site and population data. Aiming to serve a diverse range of user communities, including conservationists, plant breeders, policy-makers and protected area managers, great care has been given to data standardisation. Several case studies have been developed by PGR Forum participants to test CWRIS and some snapshots are shown here to provide a sample of the capabilities of CWRIS for management of conservation data.

## Structure of the CWR descriptors

The information is organised along two dimensions: **taxon information** and **site and population information**. Site maps are shown for both taxon (left) and site and population information (below).

**CWRIS Crop Wild Relative Information System**



[Home Page](#)

- └ [CWR Case Studies](#)
  - └ [Asparagus officinalis](#)
    - └ **Taxon information**

[Taxon biological data](#)

[Taxon conservation action](#)

[Taxon ecogeographic data](#)

[Taxon nomenclature](#)

[Taxon population information](#)

[Taxon references](#)

[Taxon threat](#)

[Taxon utilisation](#)

[Other taxon information](#)

[Home](#)

[Taxonomy](#)

[People](#)

[Links](#)

[Search](#)

[Help](#)

**Crop Wild Relative Information System**

[Home Page](#)

- └ [CWR Case Studies](#)
  - └ [Asparagus officinalis](#)
    - └ **Site and population information**

[Site location](#)

[Population size](#)

[Population structure](#)

[Population dynamics](#)

[Population management](#)

[Biotic interaction](#)

[Ethnography](#)

[Characterisation and evaluation](#)

[Local threat \(to specific population\)](#)

[Conservation measures \(applied to specific population\)](#)

[Other population information](#)

## Utilisation: a defining characteristic of crop wild relatives

A defining attribute of a CWR is its utilisation. This can be direct, for example as wild salad, or indirect, as potential breeding material for the target crop. The relationship of the CWR to the associated crop is therefore an essential piece of information that is included in the CWRIS descriptors. The information given under **taxon utilisation** is shown (below) for *Beta vulgaris* subsp. *maritima* (L.) Arcangeli, wild or sea beet (Data: L. Frese).

<i>Uses/Ethnobotany</i>	Gene source: disease resistance genes; food: leaf vegetable
<i>Target crop</i>	Sugar beet
<i>In breeding programmes</i>	
<i>Degree of relationship to crop</i>	Primary gene pool



## Threat

Threats are documented at two levels in CWRIS: for the taxon across its whole distribution or for a population of the taxon at a specific location. The threats are categorised according to the IUCN Threat Authority File.

<i>Threats</i>	1.1.5. habitat loss: abandonment
<i>Red list assessment</i>	Norway: National Red List: DC Declining, care demanding
<i>Threats</i>	3.2. harvesting: over-collecting, 1. habitat damage
<i>Red list assessment</i>	Lithuania: National Red List (2003): vulnerable

The example of *Arnica montana* L. (above) has multiple entries for taxon **threat**: the data for Norway provided by A. Asdal, for Lithuania by J. Labokas. For *in situ* conservation management of threatened species it is crucial to know the **local threats** to a particular population. The species illustrating this is the Western European maritime endemic *Asparagus officinalis* subsp. *prostratus* (Dumort) Corb. Local threats to this species at a particular site, Port Eynon, Wales, are shown in the box below (Source: Rich *et al.* 2002). The same IUCN threat standards are used here to classify the local threats.

<i>Site location</i>	Port Eynon
<i>Threat category</i>	7.2 Natural disasters: Storms and floods and 10.1 Human disturbance: Tourism
<i>Threat reason</i>	Population may have been reduced by collecting in the past.

## Site location information

The example (top right) shows three of the **site locations** in the Czech Republic, where the near-threatened *Allium schoenoprasum* subsp. *sibiricum* (L.) Richter occurs.

<i>Named area</i>	<i>Nearest named place</i>
Krkonoše	Úpská jáma
Krkonoše	Úpská jáma, 2. lavinový svah (ve sm. V-Z), pod horním úpským vodopádem (2)
Nízký Jeseník	Suchá Rudná (Podlesí) , PP Morgenland

In addition to location details, the webpage with the overview of the **site locations** gives the original source of the data: in this case the Czech National Phytosociological Database, made available by Z. Stehno. In the **Site location** table, for each location, habitat type, vegetation types and soil information are documented as shown (bottom right) for a site near Cañamares, Spain, one of a total of two locations

<i>Soil depth</i>	5 - 10 cm
<i>pH</i>	6.0 - 6.5
<i>Habitat type - IUCN</i>	4.4

of the Spanish endemic *Erodium paularense* Fern. Gonz. & Izco. The total population of this endangered species is 200 000 plants, divided over 5 populations. (Data by J. Iriondo)

## Population information

For every site location, the population should be documented for **population size, population structure and dynamics, population management**, etc. For some species this level of detail is available. The **population dynamics** data shown below were part of the preparation of the UK Biodiversity Action Plan for *Asparagus officinalis* subsp. *prostratus* (Dumort) Corb., which is known to have 28 populations in the UK and a total population size of only 1200 plants (Rich *et al.* 2002).

<i>Survey first or sequence .. date</i>	1996: several; 2001: 2 clumps
<i>Trend</i>	unlikely to survive because of small population size
<i>Site location</i>	Darvis s Point

For a full insight into the capabilities of CWRIS for management of CWR information, or to browse the CWR Catalogue for Europe and the Mediterranean, visit: <http://www.pgrforum.org/cwr/htm>

### References:

Rich, T.C.G., I.J. Bennallick, L. Cordrey, Q.O.N. Kay, A.J. Lockton and L.K. Rich (2002) Distribution and population sizes of *Asparagus prostratus* Dumort., Wild asparagus in Britain. *Watsonia*, 24 (2): pp 183 – 192