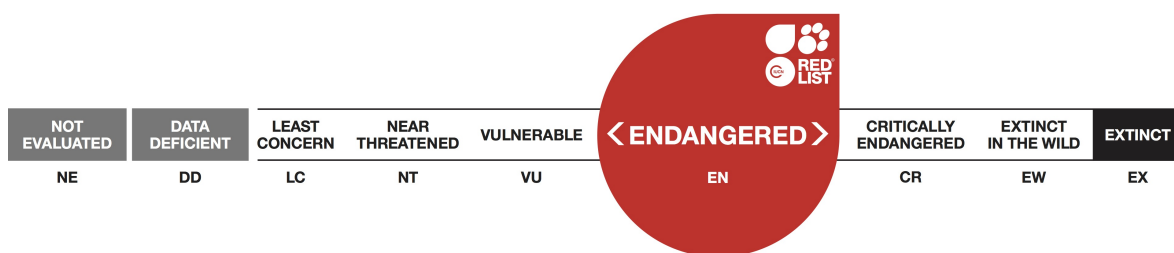




## *Juncus emmanuelis*

**Assessment by: García Murillo, P.G., Carapeto, A., Pinto Cruz, C., Ríos Ruiz, S. & Fraga i Arquimbau, P.**



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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Plantae	Tracheophyta	Liliopsida	Poales	Juncaceae

**Taxon Name:** *Juncus emmanuelis* A.Fern. & J.G.García

### Synonym(s):

- *Juncus emmanuelis* A.Fern. & J.G.García var. *inflatifolius* A.Fern. & J.G.García

### Taxonomic Source(s):

Fernandez-Carvajal, M.C. 1982. Revision del genero *Juncus* L. en la peninsula iberica. IV. subgeneros Juncinella (Fourr.) Krecz. & Gontsch., Septati Buchenau y Alpini Buchenau. *Anales Jardin Botanico de Madrid* 39 (2): 301-379.

## Assessment Information

**Red List Category & Criteria:** Endangered B2ab(ii,iii,iv) [ver 3.1](#)

**Year Published:** 2018

**Date Assessed:** December 16, 2015

### Justification:

This species is endemic to a small area in the southwestern Iberian Peninsula, with subpopulations scattered in approximately 16 localities. It is assessed as Endangered (EN B2ab(ii,iii,iv)) because it has an Area of Occupancy (AOO) of less than 500 km<sup>2</sup> and shows signs of severe fragmentation due to the ongoing transformation of its specific habitat of sandy soils with an impermeable underlayer in temporary pools, as a result of several ongoing major threats associated with intensive agricultural activities. Based on this information, a continuing decline in the AOO, habitat quality and number of subpopulations has been inferred. Additional research and conservation action is needed for this species.

## Geographic Range

### Range Description:

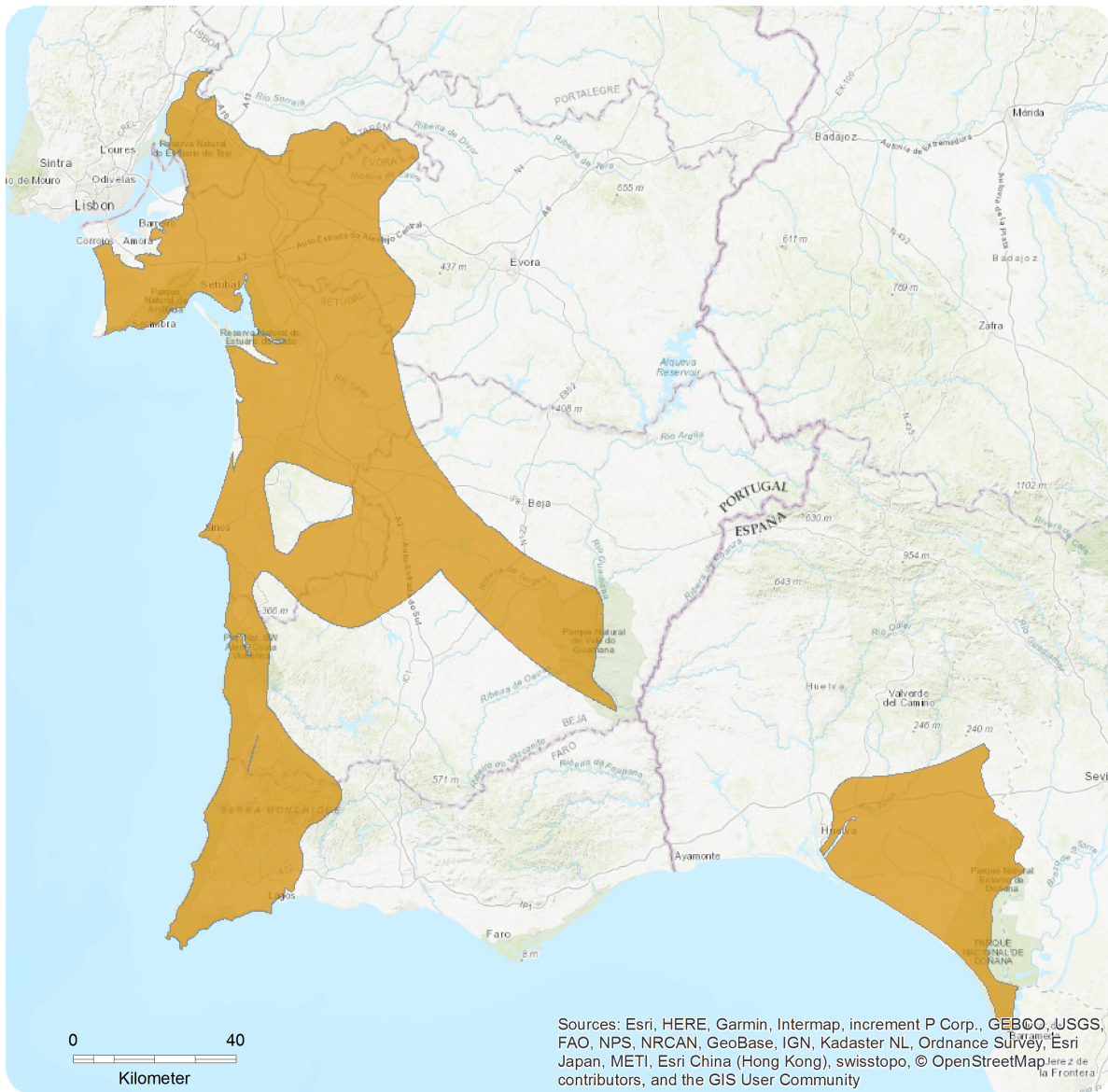
This rush is endemic to the southwest of the Iberian Peninsula, where it has only been recorded from very localized sites in the southern half of Portugal (Alto Alentejo, Baixo Alentejo, Estremadura, Algarve and Ribatejo provinces) and southwestern Spain (Huelva Province), in western Andalusia (Fernandez Carvajal 1977, Romero-Zarco 2010, Sociedade Portuguesa de Botânica 2012-2014, Anthos 2015).

### Country Occurrence:

**Native:** Portugal (Portugal (mainland)); Spain (Spain (mainland))

# Distribution Map

*Juncus emmanuelis*



## Range

Extant (resident)

## Compiled by:

IUCN Mediterranean Red List



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



## Population

This rush has a small AOO with severely fragmented and isolated subpopulations distributed in approximately 16 localities. In Portugal, despite occurring in small areas, populations are sometimes dense. In general, most subpopulations of this species are significantly disconnected with very little to no exchange and suspected to have reached no viable level because of their ecological dependence on habitats with very poor sandy wet soils, which are currently in decline due to changes in the nature of the soil and water as a result of the increasing use of fertilizers in intensive agricultural practices and other ongoing human activities such as livestock overgrazing and tourist development.

**Current Population Trend:** Decreasing

## Habitat and Ecology (see Appendix for additional information)

This plant inhabits temporary pools, where it is mostly found on sandy soils with an impermeable underlayer, a habitat poor in nutrients and with little mineralization.

**Systems:** Terrestrial, Freshwater

## Use and Trade

This taxon is not utilized.

## Threats (see Appendix for additional information)

The main threats to this species are habitat degradation and destruction, particularly due to the development of new intensive agricultural practices since 1980s such as the use of fertilizers, pesticides, agricultural effluents, sedimentation and infrastructures, which affect greatly the habitat of this species. Other important threats to the species are livestock ranching and overgrazing and the development of touristic infrastructures within its distributional range. Also in a global context, the increased effect of droughts due to processes associated to climate change is expected to represent a significant threat in the future.

## Conservation Actions (see Appendix for additional information)

This species occurs in several protected areas (IUCN and UNEP-WCMC 2017). Most of the population of this species occurs in habitat designated as priority under the European Habitats Directive (EEC - European Economic Community 1992).

In Spain, this species is protected at regional level under the designation of “taxa of special interest” by Decreto 33/1998, de 5 de mayo de 1998, in Comunidad de Castilla-La Mancha. It is also included in the Regional Red List of the Andalusia region as DD by (Cabezudo *et al.* 2005).

Studies oriented to survey the potential occurrence of this species also in North Africa are suggested, since the same kind of habitat is also present. Research studies for evaluating trends and threats to its

population, as well as the ecological requirements of this species are also advised. Other recommended conservation actions include legislation development at national and sub-national level, habitat protection, site management and ex-situ conservation.

## Credits

**Assessor(s):** García Murillo, P.G., Carapeto, A., Pinto Cruz, C., Ríos Ruiz, S. & Fraga i Arquimbau, P.

**Reviewer(s):** García, N. & Allen, D.J.

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**Facilitators(s) and  
Compiler(s):** Barrios, V.

## Bibliography

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Fernandez Carvajal, MC. 1977. *Juncus emmanuelis* Fernandes & Garcia en la Peninsula Iberica. *Anales Instituto Botanico Cavanilles* 34(1): 125-131.

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## External Resources

For [Images and External Links to Additional Information](#), please see the [Red List website](#).

# Appendix

## Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
5. Wetlands (inland) -> 5.8. Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	Resident	Suitable	Yes

## Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
11. Climate change & severe weather -> 11.2. Droughts	Future	Unknown	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.4. Scale Unknown/Unrecorded	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.1. Nomadic grazing	Ongoing	Unknown	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other		
2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6

	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other			
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	Unknown	Unknown	Unknown	
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other			
7. Natural system modifications -> 7.3. Other ecosystem modifications	Ongoing	Unknown	Unknown	Unknown	
	Stresses:	1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other			
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.1. Nutrient loads	Ongoing	Majority (50-90%)	Rapid declines	Medium impact: 7	
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other			
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.2. Soil erosion, sedimentation	Ongoing	Unknown	Unknown	Unknown	
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other			
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.3. Herbicides and pesticides	Ongoing	Unknown	Unknown	Unknown	
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.7. Reduced reproductive success 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other			



9. Pollution -> 9.4. Garbage & solid waste	Ongoing	Unknown	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 1. Ecosystem stresses -> 1.3. Indirect ecosystem effects 2. Species Stresses -> 2.2. Species disturbance 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.8. Other		

## Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions in Place</b>
In-Place Land/Water Protection and Management
Occur in at least one PA: Yes

## Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions Needed</b>
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
3. Species management -> 3.4. Ex-situ conservation -> 3.4.2. Genome resource bank
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.1. Legislation -> 5.1.3. Sub-national level

## Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Research Needed</b>
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

## Additional Data Fields

<b>Distribution</b>
Estimated area of occupancy (AOO) (km <sup>2</sup> ): 284
Continuing decline in area of occupancy (AOO): Yes
Extreme fluctuations in area of occupancy (AOO): Unknown
Estimated extent of occurrence (EOO) (km <sup>2</sup> ): 55951
Continuing decline in extent of occurrence (EOO): Unknown
Continuing decline in number of locations: Yes
Extreme fluctuations in the number of locations: Unknown
Lower elevation limit (m): 0
Upper elevation limit (m): 200
<b>Population</b>
Continuing decline of mature individuals: Unknown
Extreme fluctuations: No
Population severely fragmented: Yes
<b>Habitats and Ecology</b>
Continuing decline in area, extent and/or quality of habitat: Yes

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