G3.8 Pinus canariensis woodland

Summary

This pine woodland dominated by the Canarian endemic *Pinus canariensis*, forms the natural vegetation in the high mountains of the central and western Canary Islands, occurring on slopes in dry sunny conditions above the cloud layer (caused by the trade winds) and, locally, at lower elevations on rocky outcrops and recent lava deposits. The tree cover varies in density is depending on the soil and slope conditions and usually has an understory of woody subshrubs. Stands have been extensively logged in the past due to their timber value. The pine is a fire-adapted tree, with a thick bark that resists fire and having the capacity to resprout. Mismanagement of fires and invasion of non-native species are the main threats.

Synthesis

The habitat type is assessed as Least Concern on the basis of its stable trends in quantity and quality, and the fact that there are no known plausible threats that may induce collapse in the near future to the habitat. However, it has a very restricted distribution and it is recommended that the threats and trends are periodically monitored.

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Least Concern	-	Least Concern	-

Sub-habitat types that may require further examination

No sub-habitats need to be distinguished for further analysis.

Habitat Type

Code and name

G3.8 Pinus canariensis woodland

Pinus canariensis. Tenerife, Spain (Photo: Marcelino del Arco.)

Pinus canariensis in lava fields. Chio, Tenerife, Spain (Photo: Marcelino del Arco.)

Habitat description

This pine forest is dominated by the Canarian endemic *Pinus canariensis*, which constitutes the potential natural vegetation or dominant habitat type in the corresponding vegetation belts of the western Canary Islands, where volcanic mountains reach sufficient elevation. It occupies an altitudinal range between

1,250 and 2,000-2,300 m on northern slopes, above the cloud layer (*mar de nubes*) caused by the trade winds. There it occurs above the lauroid forest belt (*monteverde*), while on southern slopes it is in contact with the xerophytic lowland Canarian habitats with junipers. Locally, on rocky outcrops, it can extend down to 500 m and it is also a colonizer of lava depositions (*malpaíses*). These woodlands vary from open to dense depending on the soil and slope conditions, and consist of pine stands in most places, having an understory of woody legumes (*Adenocarpus viscosus, Chamaecytisus proliferus*), Lamiaceae (*Bystropogon origanifolius, Sideritis soluta*) and Cistaceae (*Cistus symphytifolius*). They are out of the mist influence of the cloud layer and subsist under dry sunny conditions.

This habitat is the remnant of an ancient forest which was widespread in the western Mediterranean basin in the late Tertiary period (remnants have also been found in southern France and mainland Spain), but it is now only restricted to the Canary Islands, hosting lineages of a genuine Mediterranean flora. Stands have been extensively logged in the past due to their timber value and they continue to be exploited as an important resource, particularly in artificial plantations located on deep soils and in the moister areas naturally occupied by the lauroid forest. The Canary Pine (*Pinus canariensis*) is a fire-adapted tree, with a thick bark that resists fire and the capacity to resprout.

Characteristic species:

Vascular plants: *Pinus canariensis, Adenocarpus viscosus, Bystropogon origanifolius s. l.,Chamaecytisus proliferus s. l., Cistus symphytifolius s. l., Juniperus cedrus, Lotus campylocladus, Lotus hillebrandii, Lotus spartioides, Micromeria benthamii, Micromeria lanata, Micromeria pineolens, Micromeria varia meridialis, Sideritis oroteneriffae, Sideritis soluta, Teline stenopetala spachiana, Tinguarra montana, Isoplexis isabelliana**

Birds: *Fringilla teydea, Dendrocopos major canariensis**, *Dendrocopos major thanneri**

*Priority species included in the Annexes of the Birds and Habitats Directive

Indicators of quality:

- Little or no signs of exploitation signs, such as logging.
- No signs of heavy grazing.
- No signs of invasive alien species (i.e. *Escholtzia californica*, *Pennisetum setaceum*, *Ailanthus altissima*, etc. start to be relatively abundant in certain areas).
- Structural diversity/ complexity with (semi)natural age structure or completeness of layers.
- Presence of old trees and a variety of dead wood (lying or standing) and the associated flora, fauna and fungi.

Classification

This habitat may be equivalent to, or broader than, or narrower than the habitats or ecosystems in the following typologies.

EUNIS:
Canary Island *Pinus canariensis* woodland

EuroVegChecklist alliances:
Cisto symphytifolii-Pinion canariensis Rivas Goday et Esteve ex Esteve 1969

Annex 1:
9550 Canary Island endemic pine forests

Emerald:
G3.8 Canary Island Pinus canariensis woodland

MAES-2:

Terrestrial woodland and forest

IUCN:
1.5. Subtropical/Tropical Dry Forests

European Forest Types:
FT 10.3 Canarian pine forest

Does the habitat type present an outstanding example of typical characteristics of one or more biogeographic regions?
Yes

Regions
Macaronesian

Justification
The distribution of this habitat is restricted to central and western Canary Islands, particularly in the islands of Tenerife, La Palma, Gran Canaria, El Hierro and (punctually) La Gomera.

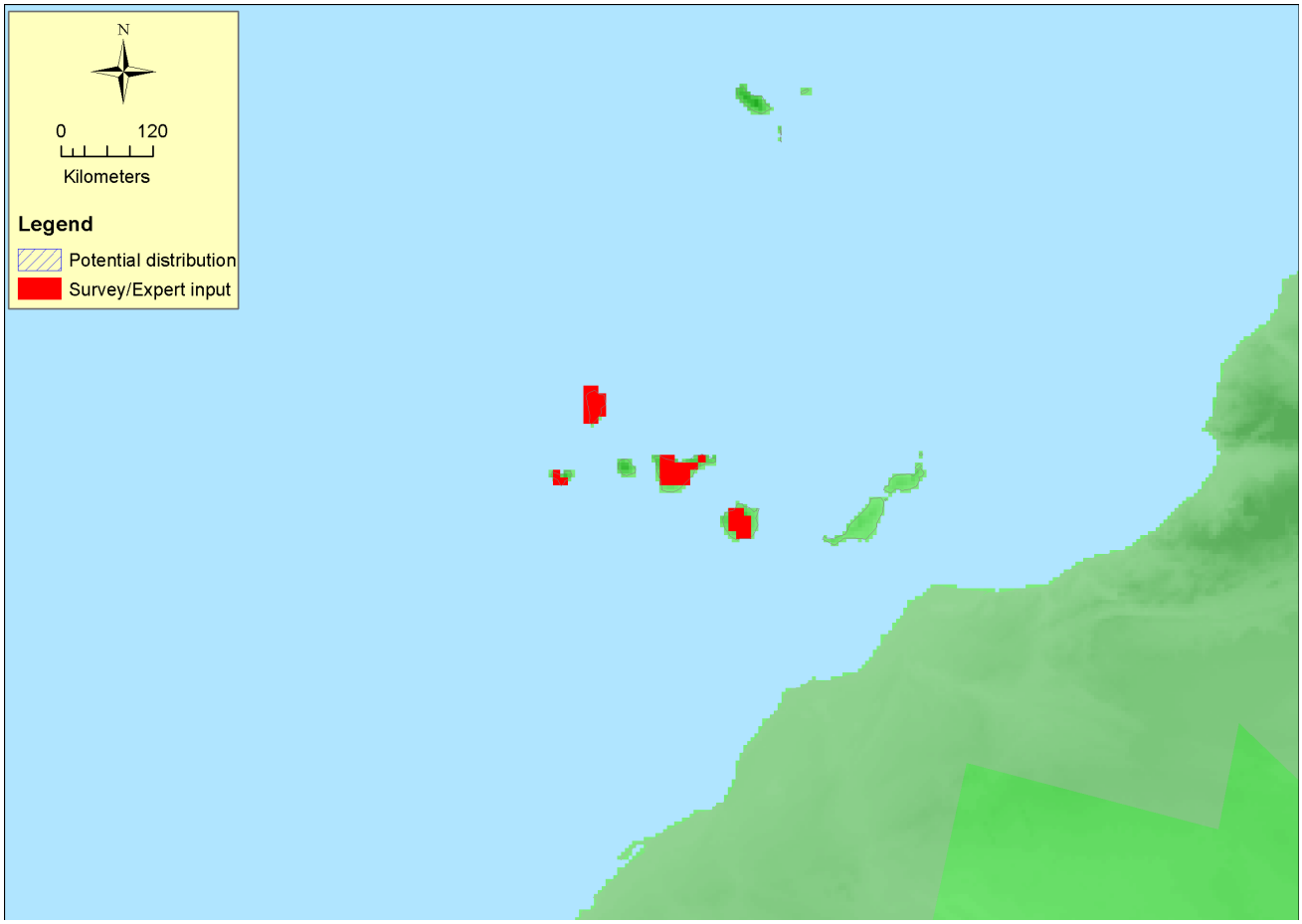
Geographic occurrence and trends

EU 28	Present or Presence Uncertain	Current area of habitat	Recent trend in quantity (last 50 yrs)	Recent trend in quality (last 50 yrs)
Spain	Canary Islands: Present	395 Km^2	Stable	Stable

Extent of Occurrence, Area of Occupancy and habitat area

	Extent of Occurrence (EOO)	Area of Occupancy (AOO)	Current estimated Total Area	Comment
EU 28	27300 Km^2	42	395 Km^2	Based on distribution maps
EU 28+	27300 Km^2	42	395 Km^2	Based on distribution maps

Distribution map



The map is complete. Data source: Art17.

How much of the current distribution of the habitat type lies within the EU 28?

100% of the current distribution of the habitat type lies within the EU 28.

Trends in quantity

An historical decline has been documented, especially from the XVI to the XVIII Centuries, where strong deforestation for house and ship construction occurred in certain islands. This tendency is supposed to have been reverted during the last third of the XVIII Century, but there is no accurate data from 1760. The trend for the last 50 years is considered to be stable. A significant surface has been reforested with *P. canariensis* (mainly during the 1960s), but species composition and forest dynamics seem to be very far from their natural stage. This reforested surface has not been considered in the assessment. Their inclusion would raise the total surface up to 780 km^2 (according to Fernández-Palacios *et al.* 2001), compared to the 390 km^2 currently considered.

- Average current trend in quantity (extent)
  EU 28: Stable
  EU 28+: Stable
- Does the habitat type have a small natural range following regression?
  No
  Justification
  The habitat has a very small natural range (smaller than the threshold of 50,000 km^2), but the habitat does not show signs of decline or regression in the past 50 years.
- Does the habitat have a small natural range by reason of its intrinsically restricted area?
  Yes
  Justification

The Canary Pine is particularly adapted to the volcanic conditions of the Canary Islands, and its range is limited to the central and western Canary Islands.

Trends in quality

There is no sufficient evidence to assess the historical trends of quality. The data from the territorial data sheet, and from the Habitats Directive reporting for the type 9550 shows agreement on a the current trend of quality to be considered stable. This is partially due to the fact that the Canary Pine forest is currently protected under the Habitats Directive and most of its area is located inside protected areas.

- Average current trend in quality
  EU 28: Stable
  EU 28+: Stable

Pressures and threats

There are no plausible threats that may cause significant decline leading to the collapse of the habitat in the near future. Likely threats causing habitat degradation have been identified, such as invasive alien species that are starting to become relatively abundant in certain areas (*Escholtzia californica*, *Pennisetum setaceum*, *Ailanthus altissima*, etc.), and mismanagement of forest fires. The Canary Pine forest is well adapted to fire, thus the intensity and frequency of forest fires should be carefully monitored.

List of pressures and threats

Invasive, other problematic species and genes

Invasive non-native species

Natural System modifications

Fire and fire suppression

Conservation and management

Significant areas or natural *Pinus canariensis* forest are under protection, which is leading to relatively good conservation status. It is recommended to continue with this protection policy. Additionally, urgent management actions are suggested to address common problems in reforested areas (high density, regular spatial distribution, lack of dead wood). Measures suggested include tackling the issue of invasive alien species and the inclusion of disturbances (including fire) to reduce density to 300-600 trees/ha (more similar to natural forest). Repeated fire occurrences and disturbances may favor other characteristic species, like the Great spotted woodpecker (*Dendrocopos major*), which needs standing dead trees to breed. This species is currently absent in reforested areas.

List of conservation and management needs

Measures related to forests and wooded habitats

Restoring/Improving forest habitats
Adapt forest management

Measures related to spatial planning

Establish protected areas/sites
Legal protection of habitats and species

Measures related to hunting, taking and fishing and species management

Other species management measures

Conservation status

Annex 1:

9550 MAC FV

When severely damaged, does the habitat retain the capacity to recover its typical character and functionality?

The habitat recovers very well naturally after disturbances. Some of them, like forest fires, occur naturally in the system. However, other severe damages like logging or heavy goat grazing disable natural regeneration, thus threatening the capacity of the habitat to recover naturally.

Effort required

50+ years	200+ years
Through intervention	Through intervention

Red List Assessment

Criterion A: Reduction in quantity

Criterion A	A1	A2a	A2b	A3
EU 28	0 %	Unknown %	Unknown %	Unknown %
EU 28+	0 %	Unknown %	Unknown %	Unknown %

The surface of this habitat is estimated to be stable for the last 50 years, and therefore the habitat is assessed as Least Concern under Criterion A1. A stable and historical trend is also likely to apply, but there is no specific data to confirm these trends.

Criterion B: Restricted geographic distribution

Criterion B	B1				B2				B3
	EOO	a	b	c	AOO	a	b	c	
EU 28	27300 Km^2	No	No	No	42	No	No	No	No
EU 28+	27300 Km^2	No	No	No	42	No	No	No	No

There is no continuing decline neither in the EOO or the AOO of this habitat type, neither a threatening process foreseen in the next 20 years. There is no evidence of plausible threats that could cause the collapse of this habitat type, and for this reason locations are not calculated. Therefore, the habitat type is assessed as Least Concern under Criterion B. However, threats should be closely monitored since its re-evaluation may cause the habitat type to be threatened in the future.

Criterion C and D: Reduction in abiotic and/or biotic quality

Criteria C/D	C/D1		C/D2		C/D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	0 %	0 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	0 %	0 %	Unknown %	Unknown %	Unknown %	Unknown %

Criterion C	C1		C2		C3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	0 %	0 %	Unknown %	Unknown %	Unknown %	Unknown %
EU 28+	0 %	0 %	Unknown %	Unknown %	Unknown %	Unknown %

Criterion D	D1		D2		D3	
	Extent affected	Relative severity	Extent affected	Relative severity	Extent affected	Relative severity
EU 28	0 %	0%	Unknown %	Unknown%	Unknown %	Unknown%
EU 28+	0 %	0%	Unknown %	Unknown%	Unknown %	Unknown%

The trend in quality during the last 50 years is considered to be stable. This is partially due to the fact that the majority of the Canary Pine forests stands are currently inside protected areas, and all the habitat is under European protection (it is included in the Annex I of the Habitats Directive). Therefore this habitat is assessed as Least Concern under Criterion C/D, C1 and D1. There is no data supporting historic or future trends.

Criterion E: Quantitative analysis to evaluate risk of habitat collapse

Criterion E	Probability of collapse
EU 28	Unknown
EU 28+	Unknown

There is no information available to assess the habitat type under Criterion E. Therefore this habitat is assessed as Data Deficient under Criterion E.

Overall assessment "Balance sheet" for EU 28 and EU 28+

	A1	A2a	A2b	A3	B1	B2	B3	C/D1	C/D2	C/D3	C1	C2	C3	D1	D2	D3	E
EU28	LC	DD	DD	DD	LC	LC	LC	LC	DD	DD	LC	DD	DD	LC	DD	DD	DD
EU28+	LC	DD	DD	DD	LC	LC	LC	LC	DD	DD	LC	DD	DD	LC	DD	DD	DD

Overall Category & Criteria			
EU 28		EU 28+	
Red List Category	Red List Criteria	Red List Category	Red List Criteria
Least Concern	-	Least Concern	-

Confidence in the assessment

High (mainly based on quantitative data sources and/or scientific literature)

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