# Model for *Pinus pinaster atlantica* Galicia and Asturias coast (Spain)

## Model

Ppinaster_at__gal_coast__v01

## Model description

- Specie: *Pinus pinaster* Ait. subsp. *atlantica*
- Spanish Forest Inventory (SFI) code: 26
- Geographical area: Galicia and Asturias coast
- Geographical area (administrative): A Coruña, Pontevedra, north Lugo and Asturias

Figure 1: *Pinus pinaster*

## Model type

- Category: calculation without growth
- Model level: distance independent individual tree model
- Reproduction methods: seedling forest
- Stand structure: even-aged stands
- Species composition: monospecific stands
- Forest origin: natural

Figure 2: Details of *Pinus pinaster*

## Model requirements and recommended use

- Initial inventory requirements: age and dominant height of the plot; expan and dbh of the trees. Height of the crown base is a tree variable needed in order to calculate the crown variables
- Geographical area: Galicia and Asturias coast, closer places and another places with similar characteristics (assuming differences)
- Stand type: monospecific stands, resinated or not
- Execution recommended time: xx years executions (survival, growth and ingrowth equations developed by using that criteria)
- Site Index is defined as top height at a base age of 20 years

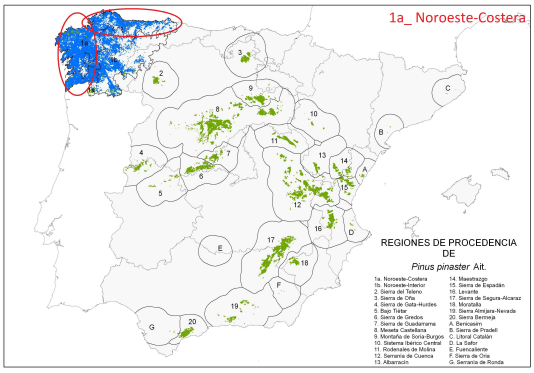



Figure 3: Provenance regions of *Pinus pinaster* in Spain

# Bibliography

**Complete SIMANFOR model recommended citation):**

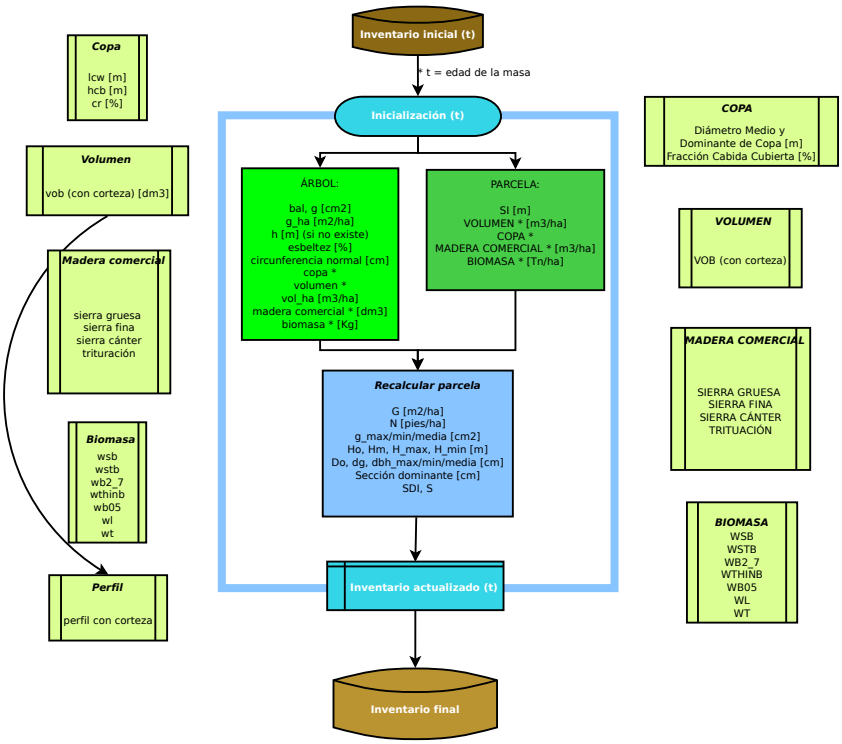
SIMANFOR (2022). Individual tree static model for maritime pine (*Pinus pinaster mesogeensis*) in Galicia and Asturias coast (Spain).

**Model components:**

- **Site Index equations**:
  Álvarez JG, González AD, Soalleiro R, Barrio-Anta M (2005). Ecoregional site index models for Pinus pinaster in Galicia (northwestern Spain). Annals of Forest Science, 62(2), 115-127
- **General calculations: bal, g, slenderness, normal circumference**:
  Standard equations
- **Generalized height-diameter equation**:
  Diéguez-Aranda U, Rojo A, Castedo-Dorado F, et al (2009). Herramientas selvícolas para la gestión forestal sostenible en Galicia. Forestry, 82, 1-16
- **Crown equations**:
  Crecente-Campo F, Álvarez-González JG, Castedo-Dorado F, Gómez-García E, Diéguez-Aranda U (2013). Development of crown profile models for Pinus pinaster Ait. and Pinus sylvestris L. in northwestern Spain. Forestry, 86(4), 481-4
- **Taper equations over bark (volume)**:
  Diéguez-Aranda U, Rojo A, Castedo-Dorado F, et al (2009). Herramientas selvícolas para la gestión forestal sostenible en Galicia. Forestry, 82, 1-16
- **Biomass equations**:
  Diéguez-Aranda U, Rojo A, Castedo-Dorado F, et al (2009). Herramientas selvícolas para la gestión forestal sostenible en Galicia. Forestry, 82, 1-16
- **Technological wood uses information**:
  Rodríguez F (2009). Cuantificación de productos forestales en la planificación forestal: Análisis de casos con cubiFOR. In Congresos Forestales
- **Value for Reineke Index equation**:
  Standard

**Figures:**

- **Figure 1:** by MAMM Miguel Angel is licensed under CC BY 2.0
- **Figure 2:** by 'A description of the genus *Pinus*', Aylmer Bourke Lambert
- **Figure 3:** extracted from MAPA


Inventario inicial (t)
t = edad de la masa
Inicialización (t)
ÁRBOL:
bal, g [cm2]
g_ha [m2/ha]
h [m] (si no existe)
esbeltez [%]
circunferencia normal [cm]
copa *
volumen *
vol_ha [m3/ha]
madera comercial * [dm3]
biomasa * [Kg]
PARCELA:
SI [m]
VOLUMEN * [m3/ha]
COPA *
MADERA COMERCIAL * [m3/ha]
BIOMASA * [Tn/ha]
Recalcular parcela
G [m2/ha]
N [pies/ha]
g_max/min/media [cm2]
Ho, Hm, H_max, H_min [m]
Do, dg, dbh_max/min/media [cm]
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SDI, S
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Inventario final
Copa
lcw [m]
hcb [m]
cr [%]
Volumen
vob (con corteza) [dm3]
Madera comercial
sierra gruesa
sierra fina
sierra cánter
trituración
Biomasa
wsb
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wb2_7
wthinb
wb05
wl
wt
Perfil
perfil con corteza
COPA
Diámetro Medio y
Dominante de Copa [m]
Fracción Cabida Cubierta [%]
VOLUMEN
VOB (con corteza)
MADERA COMERCIAL
SIERRA GRUESA
SIERRA FINA
SIERRA CÁNTER
TRITUACIÓN
BIOMASA
WSB
WSTB
WB2_7
WTHINB
WB05
WL
WT

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## Interest Links

**SIMANFOR - Support system for simulating Sustainable Forest Management Alternatives. Accessed 11 May 2021, in** `https://www.simanfor.es/`

**iuFOR - Sustainable Forest Management Research Institute UVa-INIA. Accessed 11 May 2021, in** `http://sostenible.palencia.uva.es/`

**ETSIIAA Palencia - Higher Technical School of Agricultural Engineering of Palencia. Accessed 11 May 2021, in** `http://etsiiaa.uva.es/`

**UVa - University of Valladolid. Accessed 11 May 2021, in** `https://www.uva.es`