Model for *Quercus pyrenaica* Castilla y León (Spain)

Model

Qpyrenaica Castilla y León

Individual tree growth model for *Quercus pyrenaica* in Castilla y León (Spain)

Figure 1: *Quercus pyrenaica*

Model description

- Species: *Quercus pyrenaica* Willd.
- Species SFNI (Spanish Forest National Inventory) code: 43
- Geographical area: Castilla y León
- Geographical area (administrative): León, Palencia, Burgos, Zamora, Valladolid, Soria, Salamanca, Ávila and Segovia

Figure 2: Details of *Quercus pyrenaica*

Model requirements and recommended use

- Initial inventory requirements: age and dominant height of the plot; expan and dbh of the trees
- Geographical area: Castilla y León, closer places and another places with similar characteristics (assuming differences)
- Stand type: monospecific stands
- Execution recommended time: 10 years executions (survival, growth and ingrowth equations developed by using that criteria)
- Site Index is defined as top height at a base age of 60 years

Figure 3: Provenance regions of *Quercus pyrenaica* in Spain

Bibliography

SIMANFOR model recommended citation:

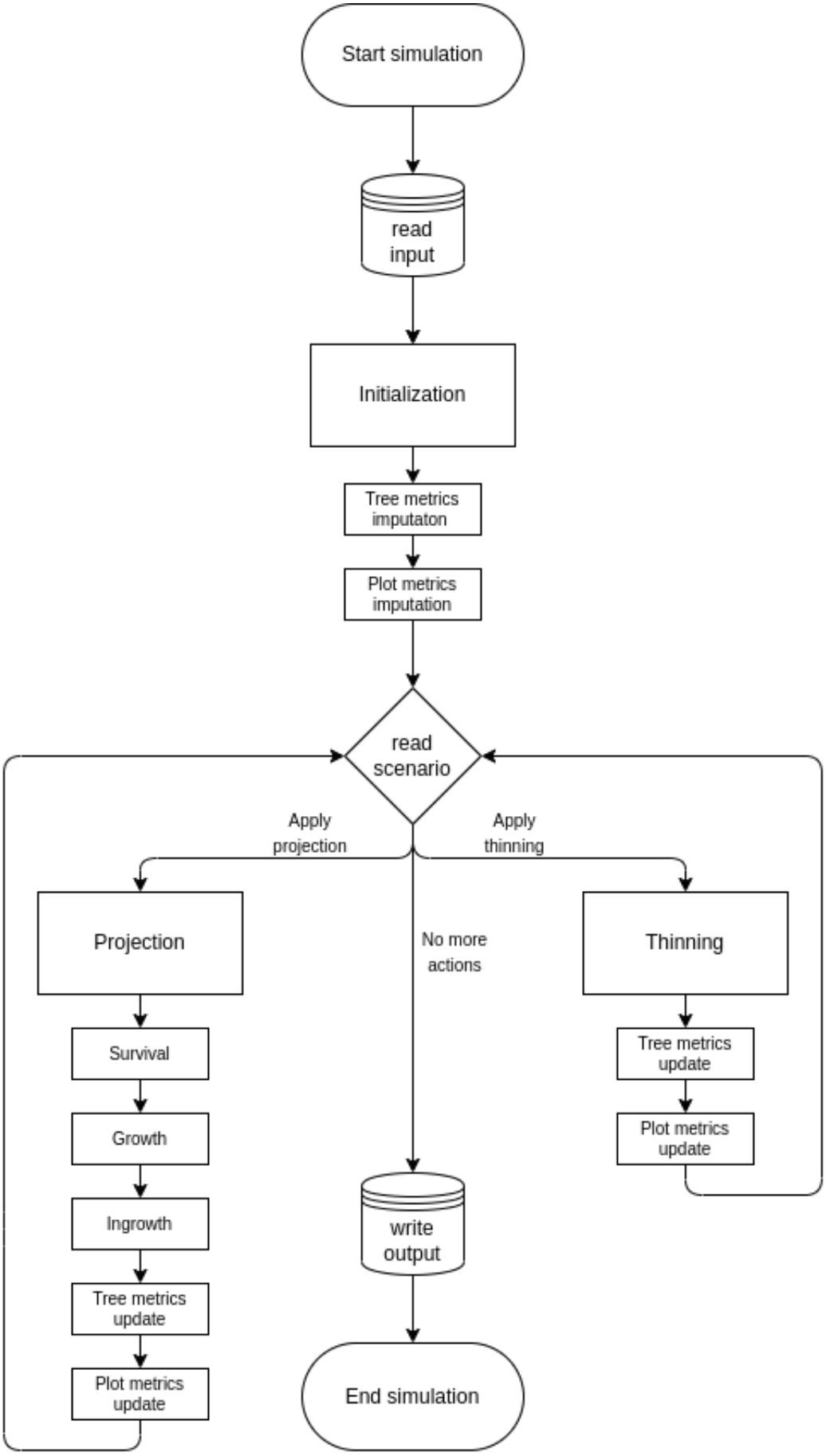
SIMANFOR (year). Individual tree growth model independent from distance for pyrenean oak (*Quercus pyrenaica*) in Castilla and León (Spain). https://www.simanfor.es/

Model components:

- **Site Index equations**:
  Adame P, Cañellas I, Roig S, del Río M (2006). Modelling dominant height growth and site index curves for rebollo oak (Quercus pyrenaica Willd.). Annals of Forest Science, 63(8), 929-940
- **Survival equation**:
  Adame P, del Río M, Cañellas I (2010). Modeling individual-tree mortality in Pyrenean oak (Quercus pyrenaica Willd.) stands. Annals of forest science, 67(8), 810
- **Diameter growth equation**:
  Adame P, Hynynen J, Cañellas I, del Río M. (2008). Individual-tree diameter growth model for rebollo oak (Quercus pyrenaica Willd.) coppices. Forest Ecology and Management, 255(3-4), 1011-1022
- **Ingrowth equation**:
  Adame P, del Río M, Cañellas I (2010). Ingrowth model for pyrenean oak stands in north-western Spain using continuous forest inventory data. European journal of forest research, 129(4), 669-678
- **Ingrowth distribution**:
  By default
- **General calculations: bal, g, slenderness, normal circumference**:
  Standard equations
- **Generalized height-diameter equation**:
  Adame P, del Río M, Cañellas I (2008). A mixed nonlinear height–diameter model for pyrenean oak (Quercus pyrenaica Willd.). Forest ecology and management, 256(1-2), 88-98
- **Taper equations over bark (volume)**:
  Rodríguez F, Lizarralde I (2015). Comparison of stem taper equations for eight major tree species in the Spanish Plateau. Forest systems, 24(3), 2
- **Biomass equations**:
  Ruiz-Peinado R, Montero G, del Rio M (2012). Biomass models to estimate carbon stocks for hardwood tree species. Forest systems, 21(1), 42-52
- **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 Felipe Castilla, website: `http://www.arbolapp.es/especies/ficha/quercus-pyrenaica/`
- **Figure 2:** by Duhamel du Monceau, H.L., Traité des arbres et arbustes, Nouvelle édition [Nouveau Duhamel], vol. 7: t. 56 (1800-1803)
- **Figure 3:** extracted from MAPA


Start simulation
read input
Initialization
Tree metrics imputaton
Plot metrics imputation
read scenario
Apply projection
Apply thinning
No more actions
Projection
Survival
Growth
Ingrowth
Tree metrics update
Plot metrics update
Thinning
Tree metrics update
Plot metrics update
write output
End simulation

Contacts

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Related information

SIMANFOR - Support System for the Simulation of Sustainable Forest Management Alternatives. Website (`https://www.simanfor.es/`) **and GitHub repository** `https://github.com/simanfor`

iuFOR - University Institute for Sustainable Forest Management. Website: `http://sostenible.palencia.uva.es/` y `https://iufor.uva.es/`

ETSIIAA Palencia - Higher Technical School of Agricultural Engineering of Palencia. Website: `http://etsiiaa.uva.es/`

UVa - University of Valladolid. Website `https://www.uva.es`