

|                                   |   |
|-----------------------------------|---|
| Title                             | <b>Oak tree phenology</b>   |
| General metadata                  |   |
| Abstract                          | The leaf-out phenology of a proportion of tagged oak trees ( <i>Quercus robur</i> ) is annually monitored from March to June to register the date of six stages from bud burst to fully extended and hardened leaves. |
| Keywords                          | Leaf burst, oak, phenology  |
| Is this part of a larger study?   | Yes, This observations are pat of the blue tits breeding season study   |
| Individual: Primary contact       | Julia Schroeder   |
| Position                          | Lecturer in Ecology and Evolution   |
| Organization                      | Imperial College London, Department of Life Science   |
| Address                           | Buckhurst Road, Ascot, SL5 7PY  |
| Phone                             | +44 (0)20 7594 9086   |
| Email                             | julia.schroeder@imperial.ac.uk  |
| Web address                       | <a href="http://www.imperial.ac.uk/people/julia.schroeder">http://www.imperial.ac.uk/people/julia.schroeder</a>   |
| Individual: Associated parties    | Catalina Estrada Montes   |
| Position                          | Ecological Analyst and Facility Manager   |
| Organization                      | Imperial College London, Department of Life Science   |
| Address                           | Buckhurst Road, Ascot, SL5 7PY  |
| Phone                             | +44 (0)20 7594 2217   |
| Email address                     | c.estrada@imperial.ac.uk  |
| Funding                           | Imperial College London, Department of Life Science   |
| Data set status and accessibility |   |
| Status                            | Ongoing   |
| Latest update                     | February 2022   |
| Latest archive date               | February 2022   |
| Metadata status                   | February 2022   |
| Accessibility                     |   |
| Storage location and medium       | "Research group space: SilwoodLTE", Imperial College London, ICT department   |
| Usage rights                      | Open access   |
| Geographic metadata               |   |
| Geographic description            | The study site is Silwood Park Campus from Imperial College London, Buckhurst Road, Ascot, Berkshire SL5 7PY, United Kingdom. Silwood Park campus, with 100   |

|                               | <p>ha, contains ancient woodlands and few-decades-old oak-dominated woodlands. Study oak trees have been set across the campus woodlands, which are classified as W10a, W10e and W16a using the National Vegetation Classification. Silwood Park experiences an average annual rainfall of 697mm with little seasonal pattern (1987-2019). Mean hourly temperature is 10°C with July max of 23 °C and February min of 1.2 °C (1987-2019).</p>  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
|-------------------------------|--|---------|--------------|----------------------|---------------|------------------------|-----------------|--------------------|------------|----------------------|---------|------------------------|-----------------|-------------------------|------------------|-----------------------|----------------|------------------|----------|-------------------------------|------------------------|----------------------------|---------------------|----------------------|---------------|
| Bounding coordinates          | <p>General for Silwood Park. The specific location and detail information of trees can be found in file: tblTrees.csv.<br/>In 2020 part of the campus boundaries changed and this resulted in the loss of about 116 trees.</p>   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Latitude                      | 51.411   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Longitude                     | -0.647   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| UK National grid              |  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Square                        | SU   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Easting                       | 94196  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Northing                      | 68866  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Temporal metadata             |  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Temporal description          | <p>Oak leaf bursting has been observed in a series of trees since 2007. Trees have been divided in those observed each year (Long term trees) or those observed every other year; in even (even trees) or odd years (odd trees). Trees enter the database to replace dead individuals in any category.<br/>Missing data: 2020</p>  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Begin                         | 2007   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| End                           | Ongoing  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Taxonomic metadata            |  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| General Information           |  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Taxonomic level:              | Angiospermae   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Taxonomic level: Species      | <p>Table: NAMESP</p> <table border="1"> <thead> <tr> <th>Species</th> <th>Species code</th> </tr> </thead> <tbody> <tr> <td><i>Quercus robur</i></td> <td>quercus.robur</td> </tr> <tr> <td><i>Fagus sylvatica</i></td> <td>fagus.sylvatica</td> </tr> <tr> <td><i>Populus sp.</i></td> <td>populus.sp</td> </tr> <tr> <td>Unidentified conifer</td> <td>conifer</td> </tr> <tr> <td><i>Castanea sativa</i></td> <td>castanea.sativa</td> </tr> <tr> <td><i>Carpinus betulus</i></td> <td>carpinus.betulus</td> </tr> <tr> <td><i>Betula pendula</i></td> <td>betula.pendula</td> </tr> <tr> <td><i>Alnus sp.</i></td> <td>alnus.sp</td> </tr> <tr> <td><i>Aesculus hippocastanum</i></td> <td>aesculus.hippocastanum</td> </tr> <tr> <td><i>Acer pseudoplatanus</i></td> <td>acer.pseudoplatanus</td> </tr> <tr> <td><i>Juglans regia</i></td> <td>juglans.regia</td> </tr> </tbody> </table> | Species | Species code | <i>Quercus robur</i> | quercus.robur | <i>Fagus sylvatica</i> | fagus.sylvatica | <i>Populus sp.</i> | populus.sp | Unidentified conifer | conifer | <i>Castanea sativa</i> | castanea.sativa | <i>Carpinus betulus</i> | carpinus.betulus | <i>Betula pendula</i> | betula.pendula | <i>Alnus sp.</i> | alnus.sp | <i>Aesculus hippocastanum</i> | aesculus.hippocastanum | <i>Acer pseudoplatanus</i> | acer.pseudoplatanus | <i>Juglans regia</i> | juglans.regia |
| Species                       | Species code   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Quercus robur</i>          | quercus.robur  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Fagus sylvatica</i>        | fagus.sylvatica  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Populus sp.</i>            | populus.sp   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Unidentified conifer          | conifer  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Castanea sativa</i>        | castanea.sativa  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Carpinus betulus</i>       | carpinus.betulus   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Betula pendula</i>         | betula.pendula   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Alnus sp.</i>              | alnus.sp   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Aesculus hippocastanum</i> | aesculus.hippocastanum   |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Acer pseudoplatanus</i>    | acer.pseudoplatanus  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| <i>Juglans regia</i>          | juglans.regia  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |
| Methods                       |  |         |              |                      |               |                        |                 |                    |            |                      |         |                        |                 |                         |                  |                       |                |                  |          |                               |                        |                            |                     |                      |               |

|                             |  |
|-----------------------------|--|
| metadata                    |  |
| General experimental design | <p>Extracted from: Lopera Doblás (2017) Field Season Protocol -handbook.pdf</p> <p>There are approximately 3700 individually marked oak trees in Silwood, divided into three categories: long term oaks which are monitored every year, odd year oaks and even year oaks which are monitored in odd and even years respectively. Trees should be marked at the beginning of the season with tape in order to identify from the distance.</p> <p>Trees are associated by distance to a named bird box. There is a network of woodcrete nest boxes across the campus' woodlands used to study the breeding phenology of blue tits. From 286 nest boxes in 2019, 32 were excluded from experiment due to the sale of campus land. 1 was removed by damage of tree. In 2022 there are 220 active nest boxes, 173 boxes have a small entrance (26 mm) that exclude great tits and 47 have a larger entrance (32mm).</p>   |
| Data collection             | <p>Monitoring involves visiting every individual oak every other day from March 20th onwards to look for signs of leaf development, and scoring them according to the scale below, until they reach stage 6</p>  <p>Figure: different stages of the leaves.</p> <p>0 = no sign of green<br/> 1 = green just showing<br/> 2 = budburst i.e., when the bud is elongated<br/> 3 = shaving brush leaves emerged<br/> 4 = leaves fully extended<br/> 5 = trees anthers shedding pollen<br/> 6 = leaves turned dark green and waxy (tanninised)</p> <p>If a tree has some leaves (not just 2, something easy to find by another observer) in stage 3, the whole tree will be in stage 3. It is important to decide when a tree is in a certain stage and always do it on the same way in order to avoid differences between observations.</p> <p>Once a tree reaches stage six it is also given a defoliation score (how much has been eaten by caterpillars!). Defoliation scores:</p> <p>6 = 100 % leaf area loss<br/> 5 = 50-99%<br/> 4 = 25-49%<br/> 3 = 12-24%<br/> 2 = 6-11%<br/> 1 = 1-5%<br/> 0 = intact leaf</p> <p>At this stage, the person recording the stage of the tree should stand under the tree to get the defoliation score. For this, divide the tree in areas and establish a general</p> |

|                     |  |
|---------------------|--|
|                     | <p>score for the whole tree. It could happen that the upper part of the tree is been eaten and the bottom has not.</p> <p><b>Girth:</b> There is information of the circumference of some trees. File “oaks_GIS data” contains circumference information for some trees but has not a date associated. In the database (tblGirth.csv) these measures have been identified as 2007-2015 girths. Some measures have been done since from a period of three years, also without a date, this are identified as 2016-2019. None have an associated VisitID. Read README DataBaseOaks.txt to find more.</p> |
| Quality control     | <p>Phenology observations have been done by different researchers over the years. A complete list can be found in file: tblObservers.csv</p> <p>Curation of data files and creation of metadata has been done by Catalina Estrada since January 2018. Please read README_DataBaseOaks.txt to see specific issues and decisions.</p>  |
| Data table metadata |  |
| Number of tables    | 7  |
|                     |  |

|  |  |        |   |
|--|--|--------|---|
| <b>File name</b>                               | <b>SilwoodCollectors.csv, SilwoodCollectors.txt</b>  |        |   |
| <b>Description</b>                             | <b>Gives information of people involved in data collection for this and other projects at Silwood Park</b> |        |   |
| Size   | 5KB  |        |   |
| Case sensitive                                 | no   |        |   |
| Number or records                              | 37   |        |   |
| Number of attributes                           | 8  |        |   |
| Orientation                                    | Variables (attributes) included as columns   |        |   |
| Data table structure and attribute description |  |        |   |
| Attribute name                                 | Definition   | Type   | Attribute description   |
| ObserverID                                     | Unique code, <b>Primary key</b>  | String | Code: inicial first name.second names. n.nXX for data related to initials XX initials in raw data of unknown researcher         |
| FirstName                                      | Observer first name  | String | Text  |
| SecondName                                     | Observer second name   | String | Text  |
| email  | Observer email address when participated in project  | String | Text<br>NA: unknown   |
| Position                                       | Observers position at Imperial College London or other institution during data collection                  | String | Text<br>MSc: Master students MSc and MRes   |
| Source   | Source of data used for this observer or researcher  | String | Text<br>Thesis (UG and MSc), Long term experiments (LTE), Sightings, Surveys, Monitoring. One one observer has several types of |

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|-------|--|--------|--|
|       |  |        | source only one added.   |
| Code  | Code name used to relate to other information in data base for this researcher. Primary key in file FieldProjects list | String | Text: This help locate data and application forms for researchers. |
| Notes | Further information associated with researcher   | String | Text   |

|  |   |        |                                 |
|--|---|--------|---------------------------------|
| <b>File name</b>                               | <b>tblTreeMarks.csv, tblTreeMarks.txt</b>   |        |                                 |
| <b>Description</b>                             | <b>Give information of the kind of marks trees might receive</b>                            |        |                                 |
| Size   | 428 bytes   |        |                                 |
| Case sensitive                                 | no  |        |                                 |
| Number or records                              | 4   |        |                                 |
| Number of attributes                           | 3   |        |                                 |
| Orientation                                    | Variables (attributes) included as columns  |        |                                 |
| Data table structure and attribute description |   |        |                                 |
| Attribute name                                 | Definition  | Type   | Attribute description           |
| MarkID   | Unique text to recognize the type of mark given to a tree. <b>Primary key</b>               | String | Text:<br>Tag, Blue, Round, Spec |
| Description                                    | Brief description of marks applied and uses   | String | Text                            |
| Picture  | Name of picture that show an example of mark. All pictures are included in folder TreeMarks | String | Text                            |

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|--|--|---------|--|
| <b>File name</b>                               | <b>tblVisits.csv, tblVisits.txt</b>  |         |  |
| <b>Description</b>                             | <b>Give information of when and who visited trees to do something to them (e.g. phenology scoring, tagging, measure)</b> |         |  |
| Size   | 2.5 MB   |         |  |
| Case sensitive                                 | No   |         |  |
| Number or records                              | 1003098  |         |  |
| Number of attributes                           | 4  |         |  |
| Orientation                                    | Variables (attributes) included as columns   |         |  |
| Files used to fill data                        | Read README_DataBaseOaks.txt to find out how this table was built  |         |  |
| Data table structure and attribute description |  |         |  |
| Attribute name                                 | Definition   | Type    | Attribute description  |
| VisitID  | Unique number for each visit to a tree, <b>Primary key</b>   | Integer | Count<br>Min: 1, Max: 100231                                     |
| TreeID   | Unique number given to each tree, <b>Foreign key from: TblTrees.csv</b>  | Integer | Count<br>Min: 1, Max: 3997                                       |
| Date   | Date visit happen  | date    | DD/MM/YYYY   |
| ObserverID                                     | Unique code, <b>Foreign key from:</b>  | String  | Code: inicial first name.second names. n.nXX for data related to |

|  |                                       |  |  |
|--|---------------------------------------|--|--|
|  | <a href="#">SilwoodCollectors.csv</a> |  | initials XX initials in raw data of unknown researcher<br>NA: no available |
|--|---------------------------------------|--|--|

|  |   |         |   |
|--|---|---------|---|
| <b>File name</b>                               | <b>tblMarkings.csv, tblMarkings.txt</b>   |         |   |
| <b>Description</b>                             | <b>Give information of markings (tags) given and changed</b>  |         |   |
| Size   | 75KB  |         |   |
| Case sensitive                                 | No  |         |   |
| Number or records                              | 4097  |         |   |
| Number of attributes                           | 4   |         |   |
| Orientation                                    | Variables (attributes) included as columns  |         |   |
| Files used to fill data                        | Read README_DataBaseOaks.txt to find out how this table was built                                   |         |   |
| Data table structure and attribute description |   |         |   |
| Attribute name                                 | Definition  | Type    | Attribute description                           |
| VisitID  | Unique number of visit when a mark was put in a tree. <b>Primary key, also in TblVisits.csv</b>     | Integer | Count<br>Min: 1, Max: 100102                    |
| TreeID   | Unique number given to each tree, <b>Foreign key from: TblTrees.csv</b>                             | Integer | Count<br>Min: 1, Max: 3985                      |
| MarkID   | Unique text to recognize the type of mark given to a tree. <b>Foreign key from tblTreeMarks.csv</b> | String  | Text:<br>Tag, Blue, Round, Spec                 |
| MarkNumber                                     | Unique number in mark given   | Integer | Count<br>Min: 1, Max: 23665<br>NA: no available |

|  |  |         |   |
|--|--|---------|---|
| <b>File name</b>                               | <b>tblTrees.csv, tblTrees.txt</b>  |         |   |
| <b>Description</b>                             | <b>Give information about trees including location, territory, and status</b>                                    |         |   |
| Size   | 324KB  |         |   |
| Case sensitive                                 | No   |         |   |
| Number or records                              | 3997   |         |   |
| Number of attributes                           | 11   |         |   |
| Orientation                                    | Variables (attributes) included as columns   |         |   |
| Files used to fill data                        | Read README_DataBaseOaks.txt to find out how this table was built  |         |   |
| Data table structure and attribute description |  |         |   |
| Attribute name                                 | Definition   | Type    | Attribute description   |
| TreeID   | Unique number given to each tree involved in this or other experiment in Silwood Park campus. <b>Primary key</b> | Integer | Count<br>Min: 1, Max: 3997  |
| species  | Species of oaks as Table: NAMESP   | String  | Text<br><b>Note: When Quercus assumed to be quercus.robur .ID needs to be confirmed for some trees,</b> |

|             |  |                |   |
|-------------|--|----------------|---|
|             |  |                | particularly those note by ?  |
| Northing    | Great Britain, National Grid, northing (Ordnance Survey)                               | Floating point | Geographic coordinate<br>NA: no available   |
| Easting     | Great Britain, National Grid, easting (Ordnance Survey)                                | Floating point | Geographic coordinate<br>NA: no available   |
| Latitude    | Latitude: north-south position WGS84   | Floating point | Geographic coordinate<br>NA: no available   |
| Longitude   | Longitude: east-west position WGS84  | Floating point | Geographic coordinate<br>NA: no available   |
| SPlocation  | Silwood Park named woodland or field where tree is located                             | String         | Text following Silwood Park Site Plan 6/12/08- As field boundaries are not quite clear this location might not be always accurate   |
| NestBoxHost | Name of Nest Box set in the tree<br>Foreign key from tblNestBoxes.csv                  | String         | Alphanumeric<br>Blue tit or great tit's Nestboxes are marked with a letter and a number. In general, boxes within each woodland have the same letter.<br>NA: tree without a nest box  |
| NestBoxID   | Name of Nest Box associated to this tree, territory. Foreign key from tblNestBoxes.csv | String         | Alphanumeric<br>Territories are associated with one blue tit or great tit's nest box. Nestboxes are marked with a letter and a number. Some trees have been related to more than one territory in data sets.  |
| state       | Whether tree is dead, alive or has been removed from study                             | String         | Text<br>alive: if standing with any signal of being alive (leaves).<br>dead: standing or fallen without leaves.<br>dead?: to be confirmed dead.<br>not found: tag has not yet found on a tree dead or alive<br>out: Tree taken out of the study even if alive (e.g. 2020 sale of campus land)<br>NA: no information available |
| VisitID     | Unique number of visit when tree was reported dead or taken out of study               | Integer        | Count<br>Min: 3381, Max: 100231   |
| remarks     | Any other relevant information about the tree  | String         | Text<br>oak1 to oak30 is a Foreign key related to table oak_acorn_oaks.csv table from different long term experiment  |

|  |   |         |   |
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| <b>File name</b>                               | <b>tblPhenology.csv, tblPhenology.txt</b>   |         |   |
| <b>Description</b>                             | <b>Give information about the phenology codes for leave flushing through spring.</b>  |         |   |
| Size   | 1.7MB   |         |   |
| Case sensitive                                 | No  |         |   |
| Number or records                              | 98447   |         |   |
| Number of attributes                           | 5   |         |   |
| Orientation                                    | Variables (attributes) included as columns  |         |   |
| Files used to fill data                        | Read README DataBaseOaks.txt to find out how this table was built   |         |   |
| Data table structure and attribute description |   |         |   |
| Attribute name                                 | Definition  | Type    | Attribute description   |
| VisitID  | Unique number given to a visit to assess phenology, <b>Primary key, also in TblVisits.csv</b>   | Integer | Count<br>Min: 2826, Max: 100078   |
| TreeID   | Unique number given to each tree. <b>Foreign key from TblTrees.csv</b>  | Integer | Count<br>Min: 1, Max: 3837  |
| Score  | Number representation for the stage of leaf flushing of the tree in a given visit/day.  | String  | Alphanumeric<br>Numbers 0 to 6, sometimes along with signals < and ><br>0 = no sign of green<br>1 = green just showing<br>2 = budburst i.e., when the bud is elongated<br>3 = shaving brush leaves emerged<br>4 = leaves fully extended<br>5 = trees anthers shedding pollen<br>6 = leaves turned dark green and waxy (tanninised)<br>NA: not available |
| Anthers  | Whether or not anthers were present on the tree. Usually measured when leaf flushing is scored as 4 but see 'Data anomalies' below                  | String  | Text<br>N: anthers absent<br>Y: anthers present<br>NA: no available   |
| Defoliation                                    | Number representation for the degree of defoliation of the tree. Usually measured when leaf flushing is scored as 6 but see 'Data anomalies' below. | Integer | Numbers<br>Min: 1, Max: 6<br>6 = 100 % leaf area loss<br>5 = 50-99%<br>4 = 25-49%<br>3 = 12-24%<br>2 = 6-11%<br>1 = 1-5%<br>0 = intact leaf<br>NA: no available   |

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|--------------------|--|--|--|
| <b>File name</b>   | <b>tblRotation.csv, tblRotation.txt</b>                  |  |  |
| <b>Description</b> | <b>Give information about the tree sampling schedule</b> |  |  |
| Size               | 42KB   |  |  |
| Case sensitive     | No   |  |  |
| Number or records  | 1143   |  |  |

| Number of attributes                           | 4  |         |   |
|--|--|---------|---|
| Orientation                                    | Variables (attributes) included as columns                                     |         |   |
| Files used to fill data                        | Read README DataBaseOaks.txt to find out how this table was built              |         |   |
| Data table structure and attribute description |  |         |   |
| Attribute name                                 | Definition   | Type    | Attribute description   |
| TreeID   | Unique number given to each tree.<br><b>Primary key also from TblTrees.csv</b> | Integer | Count<br>Min: 2826, Max: 3950   |
| Rotation                                       | Latest sampling schedule for a given tree                                      | String  | Text<br>LTO: long term trees are sampled every year<br>Even: trees sampled on even years only<br>Odd: trees sampled on odd years only |
| YearIn   | The year a tree enters the sampling schedule or changed rotation               | Date    | YYYY  |
| Note   | Text explain discrepancies on rotation data from raw data                      | String  | Text  |

| <b>File name</b>                               | <b>tblNestBoxes.csv, tblNestBoxes.txt</b>  |         |   |
|--|--|---------|---|
| <b>Description</b>                             | <b>Give information about the location of blue and great tit nest boxes</b>  |         |   |
| Size   | 6KB  |         |   |
| Case sensitive                                 | No   |         |   |
| Number or records                              | 304  |         |   |
| Number of attributes                           | 5  |         |   |
| Orientation                                    | Variables (attributes) included as columns   |         |   |
| Files used to fill data                        | Read README DataBaseOaks.txt to find out how this table was built  |         |   |
| Data table structure and attribute description |  |         |   |
| Attribute name                                 | Definition   | Type    | Attribute description   |
| NestBoxID                                      | Name of Nest Box. <b>Primary key</b>   | String  | Alphanumeric<br>Nestboxes are marked with a letter and a number. In general, boxes within each woodland have the same letter. |
| TreeID   | Unique number given to each tree,<br><b>Foreign key from tblTrees.csv</b>  | Integer | Count<br>Min: 1, Max: 3997  |
| Type   | Type of nest box, determined by the size of entrance hole  | Integer | Nominal<br>26: entrance hole is 26 mm diameter<br>32: entrance hole is 26 mm diameter   |
| VisitID  | Unique number for a visit when the nest box was set on tree, or moved to another tree or removed from study. <b>Foreign key from TblVisits.csv</b> | Integer | Count<br>Min: 1, Max: 100146  |
| state  | Indicates when the nest box was set or removed to the particular tree  | String  | Nominal<br>set: relate to the VisitID when nest   |

|  |  |  |  |
|--|--|--|--|
|  |  |  | box was set on tree out: relate to VisitID when the nest box was taken down the tree, either because the tree died or because the nest box was removed from study (change in land use/owner) |
|--|--|--|--|

|  |  |         |   |
|--|--|---------|---|
| <b>File name</b>                               | <b>tblGirth.csv, tblGirth.txt</b>  |         |   |
| <b>Description</b>                             | <b>Give information about the location of blue and great tit nest boxes</b>              |         |   |
| Size   | 133KB  |         |   |
| Case sensitive                                 | No   |         |   |
| Number of records                              | 3504   |         |   |
| Number of attributes                           | 8  |         |   |
| Orientation                                    | Variables (attributes) included as columns   |         |   |
| Files used to fill data                        | Read README DataBaseOaks.txt to find out how this table was built                        |         |   |
| Data table structure and attribute description |  |         |   |
| Attribute name                                 | Definition   | Type    | Attribute description   |
| TreeID   | Unique number given to each tree,<br><b>Foreign key from tblTrees.csv</b>                | Integer | Count<br>Min: 1, Max: 3960  |
| TreeForm                                       | Basic architecture of tree   | String  | Text<br>maiden: if tree stem is not divided at 1.3m height<br>multistems: if tree stem is divided before 1.3 m height<br>NA: information not available  |
| Girth_cm                                       | Circumference of the stem(s) at 1.3 m height   | Integer | To the closest cm<br>Min: 8, Max: 601   |
| Stems  | Number of stems measured and added in the girth value                                    | Integer | Count<br>Min: 1, Max: 4<br>NA: Information not available  |
| HeightGirth_cm                                 | The height where stem's circumference was measured                                       | Integer | To the closest cm<br>Min: 20, Max: 130<br>< 130: if measured was done before the standard but there is not information of specific height<br>base: if measured was done at the base of three but is not information of specific height<br>NA: information not available |
| Estimated                                      | Whether or not the girth of stem could not be measured and was estimated                 | Integer | Nominal<br>0: no estimated, measured<br>1: estimated  |
| VisitID  | Unique number for a visit when girth was measured. <b>Foreign key from TblVisits.csv</b> | Integer | Count<br>NA: information not available  |
| Note   | Text with field information  | String  | Text<br>Please see above: Data collection/girth   |

| Data anomalies |   |
|----------------|---|
|                | <p>README_DataBaseOaks contains information of data curation for tables including the fate of potential mistakes from original data files.</p> <p><b>Important note about Anthers and Defoliation columns in phenology table (tblPhenology) table:</b> Data table from 2007-2013 has not a date associated with the assessment of the presence of anthers and the assessment of defoliation. Therefore presence/absence of anthers (Y/N) and defoliation score are included in all dates a single tree was scored for leaf bursting in a given year. In the manual presence of Anthers are said to be reported when leaf bursting is at least level 4 and defoliation when leaf-bursting score is 6. For data starting 2015 scores for anthers and defoliation are associated with a particular date in the original data files. So, overall a presence (Y) or absence (N) of Anthers data should be read as the presence /absence of anthers in the tree in a given year of sampling regardless of the date it is associated with. Similar, defoliation score is interpreted as estimated defoliation of a tree in a given year of sampling.</p> |

| Supplemental descriptors   |   |
|----------------------------|---|
|                            |   |
| Publications               |   |
| Order                      |   |
| How to cite database       | Contact <a href="mailto:c.estrada@imperial.ac.uk">c.estrada@imperial.ac.uk</a>  |
| How to acknowledge dataset | Contact <a href="mailto:c.estrada@imperial.ac.uk">c.estrada@imperial.ac.uk</a>  |
| Additional information     | <p>Sampling protocols can be found in: Lopera Doblas (2017) Field Season Protocol, file: handbook.pdf</p> <p>A map linking tables by key columns: OakDataBase_map.pdf</p> <p>Map showing nest boxes: nest boxes.jpg</p> |