



THE IUCN RED LIST  
OF THREATENED SPECIES™



## ***Picoides tridactylus* (Three-toed Woodpecker)**

### **European Red List of Birds**

### **Supplementary Material**

The European Union (EU28) Red List assessments were based principally on the official data reported by EU Member States to the European Commission under Article 12 of the Birds Directive in 2019-20. For the European Red List assessments, similar data were sourced from BirdLife Partners and other collaborating experts in other European countries and territories. For more information, see BirdLife International (2021).

#### **Contents**

Reported national population sizes and trends  
Trend maps of reported national population data  
Sources of reported national population data  
Species factsheet bibliography

#### **Recommended citation**

BirdLife International (2021) European Red List of Birds. Luxembourg: Publications Office of the European Union.

#### **Further information**

<http://datazone.birdlife.org/info/euroredlist>  
<http://www.birdlife.org/europe-and-central-asia/european-red-list-birds-0>  
<http://www.iucnredlist.org/regions/europe>  
<http://ec.europa.eu/environment/nature/conservation/species/redlist/>

#### **Data requests and feedback**

To request access to these data in electronic format, provide new information, correct any errors or provide feedback, please email [science@birdlife.org](mailto:science@birdlife.org).

*Picoides tridactylus* (Three-toed Woodpecker)

**Table 1.** Reported national breeding population size and trends in Europe<sup>1</sup>.

| Country (or territory) <sup>2</sup> | Population estimate       |            |           |                     | Short-term population trend <sup>5</sup> |                            |           |                     | Long-term population trend <sup>5</sup> |                            |           |                     | Subspecific population (where relevant) |
|-------------------------------------|---------------------------|------------|-----------|---------------------|--|----------------------------|-----------|---------------------|---|----------------------------|-----------|---------------------|---|
|                                     | Size (pairs) <sup>3</sup> | Europe (%) | Year(s)   | Method <sup>4</sup> | Direction <sup>6</sup>                   | Magnitude (%) <sup>7</sup> | Year(s)   | Method <sup>4</sup> | Direction <sup>6</sup>                  | Magnitude (%) <sup>7</sup> | Year(s)   | Method <sup>4</sup> |   |
| Albania                             | 40–130                    | <1         | 2007-2018 | partial             | +  | 30 to 100                  | 2007-2018 | partial             | +                                       | 30 to 100                  | 1980-2018 | expert              |   |
| Austria                             | 6000–9000                 | 2          | 2013-2018 | partial             | 0  |                            | 2007-2018 | partial             | ?                                       |                            | 1981-2018 | deficient           |   |
| Belarus                             | 3000–5000                 | <1         | 2010-2018 | partial             | 0  | -10 to 10                  | 2012-2019 | expert              | 0                                       | 0                          | 1980-2019 | expert              |   |
| Bosnia & HG                         | 250–400                   | <1         | 2015-2018 | complete            | ?  | -10 to 10                  | 2007-2018 | complete            | ?                                       |                            | 1980-2018 | deficient           |   |
| Bulgaria                            | 100–170                   | <1         | 2013-2018 | partial             | ?  |                            | 2000-2018 | partial             | -                                       | -30 to -20                 | 1980-2018 | expert              |   |
| Croatia                             | 500–1000                  | <1         | 2010-2015 | expert              | ?  |                            | 2007-2018 | deficient           | ?                                       |                            | 1980-2018 | deficient           |   |
| Czechia                             | 350–500                   | <1         | 2014-2017 | complete            | ?  |                            | 2007-2018 | deficient           | ?                                       |                            | 1980-2018 | deficient           |   |
| Estonia                             | 2000–4000                 | <1         | 2013-2017 | partial             | -  | -92 to 5                   | 2007-2018 | partial             | 0                                       |                            | 1980-2018 | expert              |   |
| Finland                             | 19500–34300               | 6          | 2013-2018 | complete            | 0  | -45 to 62                  | 2007-2018 | complete            | ?                                       |                            | 1980-2018 | deficient           |   |
| France                              | 10–100                    | <1         | 2013-2018 | expert              | ?  |                            | 2007-2018 | deficient           | ?                                       |                            | 1980-2018 | deficient           |   |
| Germany                             | 900–1300                  | <1         | 2012-2016 | expert              | 0  |                            | 2004-2016 | expert              | ?                                       |                            | 1980-2016 | deficient           |   |
| Greece                              | 20–50                     | <1         | 2013-2018 | partial             | ?  |                            | 2007-2018 | deficient           | ?                                       |                            | 1980-2018 | deficient           |   |
| Kosovo                              | 15–25                     | <1         | 2007-2019 | partial             | +  |                            | 2007-2018 | partial             | +                                       |                            | 1990-2018 | partial             |   |
| Latvia                              | 1000–2000                 | <1         | 2018-2018 | partial             | -  | -99 to -25                 | 2008-2018 | complete            | 0                                       |                            | 1991-2018 | expert              |   |
| Lithuania                           | 380–520                   | <1         | 2013-2018 | partial             | 0  | 0                          | 2013-2018 | partial             | 0                                       | 0                          | 1980-2018 | partial             |   |
| Montenegro                          | 1300–2600                 | <1         | 2013-2018 | partial             | +  |                            | 2007-2018 | expert              | ?                                       |                            |           |                     |   |
| Norway                              | 2100–4700                 | <1         | 2013-2018 | expert              | ?  |                            | 2013-2018 | deficient           | ?                                       |                            | 1980-2018 | partial             |   |
| Poland                              | 1000–1400                 | <1         | 2013-2017 | partial             | 0  | -27 to 14                  | 2011-2017 | complete            | ?                                       |                            | 1980-2018 | deficient           |   |
| Romania                             | 4000–23700                | 2          | 2013-2018 | partial             | ?  |                            | 2007-2018 | deficient           | ?                                       |                            | 1980-2018 | deficient           |   |
| Russia                              | 250000–450000             | 82         | 2006-2018 | partial             | ?  |                            | 2008-2018 | deficient           | +                                       | 20 to 29                   | 1980-2018 | expert              |   |
| Serbia                              | 70–120                    | <1         | 2013-2018 | partial             | 0  | 0                          | 2007-2018 | complete            | 0                                       | 0                          | 1980-2018 | complete            |   |
| Slovakia                            | 1300–2000                 | <1         | 2013-2018 | partial             | -  | -10 to -5                  | 2007-2018 | partial             | -                                       | -10 to -5                  | 1980-2018 | partial             |   |
| Slovenia                            | 350–600                   | <1         | 2002-2018 | complete            | -  | -30 to -10                 | 2011-2018 | partial             | ?                                       |                            | 1980-2018 | deficient           |   |
| Sweden                              | 5700–10900                | 2          | 2013-2018 | partial             | -  | -50 to -5                  | 2007-2018 | partial             | -                                       | -40 to -10                 | 1980-2018 | partial             |   |
| Switzerland                         | 1000–2500                 | <1         | 2013–2016 | partial             | +  | 19 to 119                  | 2007-2018 | complete            | 0                                       | -46 to 6                   | 1990-2018 | complete            |   |
| Ukraine                             | 800–1200                  | <1         | 2015-2017 | partial             | ?  |                            | 2007-2019 | deficient           | -                                       |                            | 1980-2018 | deficient           |   |
| EU28                                | 43300–91800               | 15         |           |                     |  |                            |           |                     |   |                            |           |                     |   |
| <b>Europe</b>                       | <b>301000–559000</b>      | <b>100</b> |           |                     |  |                            |           |                     |   |                            |           |                     |   |

*Picoides tridactylus* (Three-toed Woodpecker)

**Table 1.** Reported national breeding population size and trends in Europe<sup>1</sup>.

| Country (or territory) <sup>2</sup> | Population estimate       |            |         |                     | Short-term population trend <sup>5</sup> |                            |         |                     | Long-term population trend <sup>5</sup> |                            |         |                     | Subspecific population (where relevant) |
|-------------------------------------|---------------------------|------------|---------|---------------------|--|----------------------------|---------|---------------------|---|----------------------------|---------|---------------------|---|
|                                     | Size (pairs) <sup>3</sup> | Europe (%) | Year(s) | Method <sup>4</sup> | Direction <sup>6</sup>                   | Magnitude (%) <sup>7</sup> | Year(s) | Method <sup>4</sup> | Direction <sup>6</sup>                  | Magnitude (%) <sup>7</sup> | Year(s) | Method <sup>4</sup> |   |

<sup>1</sup> See 'Sources' at end of factsheet, and for more details on individual EU Member State reports, see the Article 12 reporting portal at <http://bd.eionet.europa.eu/article12/report>.

<sup>2</sup> The designation of geographical entities and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN or BirdLife International concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

<sup>3</sup> In the few cases where population size estimates were reported in units other than those specified, they were converted to the correct units using standard correction factors.

<sup>4</sup> The 'method used' (replacing the data 'quality' assessment in the 2015 European Red List) is reported as: a) Complete: complete survey or a statistically robust estimate; b) Partial: based mainly on extrapolation from a limited amount of data; c) Expert: based mainly on expert opinion with very limited data; d) Defficient: insufficient or no data available.

<sup>5</sup> The robustness of regional trends to the effects of any missing or incomplete data was tested using plausible scenarios, based on other sources of information, including any other reported information, recent national Red Lists, scientific literature, other publications and consultation with relevant experts.

<sup>6</sup> Trend directions are reported as: increasing (+); decreasing (-); stable (0); fluctuating (F); or unknown (?).

<sup>7</sup> Trend magnitudes are rounded to the nearest integer.

## Trend maps

A symbol appears in each country where the species occurs: the shape and colour of the symbol represent the population trend in that country, and the size of the symbol corresponds to the proportion of the European population occurring in that country.

### KEY

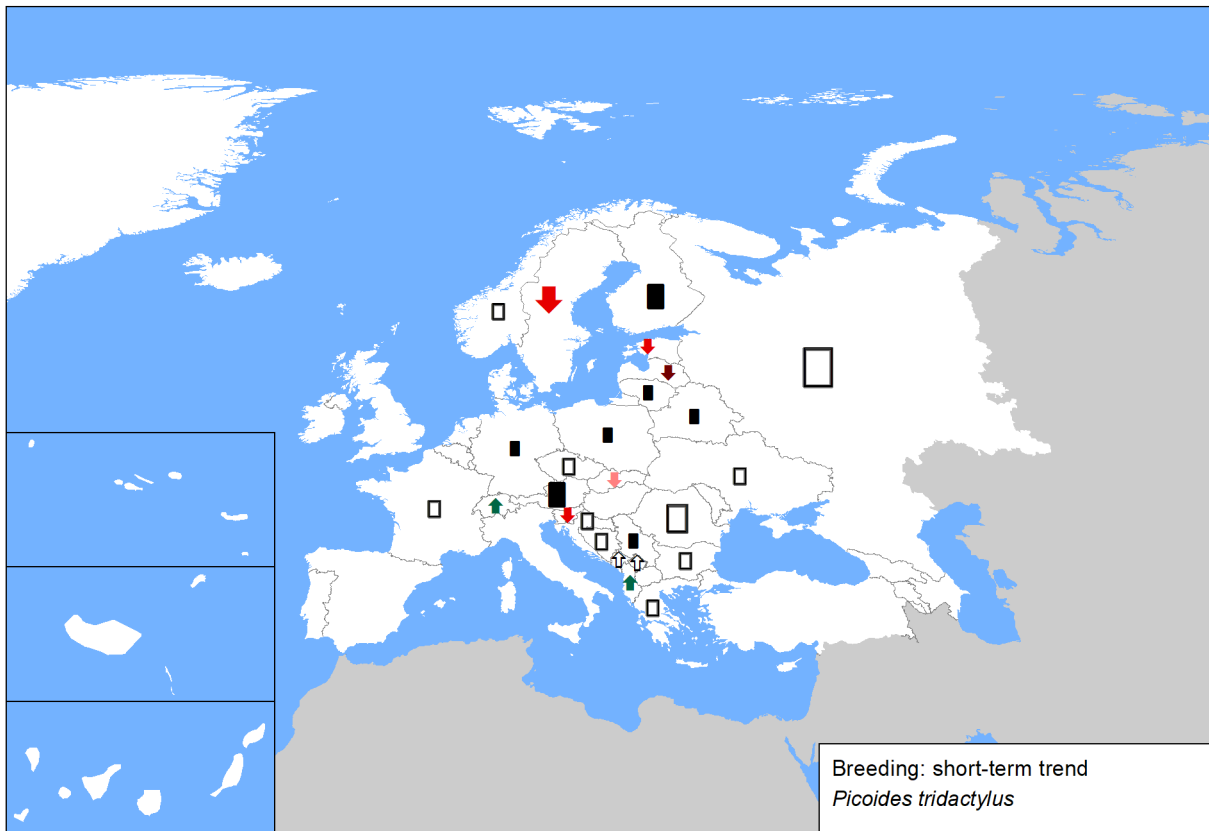
- |   |                                 |
|---|---------------------------------|
| ↑ Large increase (≥50%)                 | ↓ Large decrease (≥50%)         |
| ↑ Moderate increase (20–49%)            | ↓ Moderate decrease (20–49%)    |
| ↑ Small increase (<20%)                 | ↓ Small decrease (<20%)         |
| ↑ Increase of unknown magnitude         | ↓ Decrease of unknown magnitude |
| ■ Stable or fluctuating                 |                                 |
| □ Unknown                               |                                 |
| ○ Present (no population or trend data) |                                 |
| × Extinct since 1980                    |                                 |

Each symbol, with the exception of Present and Extinct, may occur in up to three different size classes, corresponding to the proportion of the European population occurring in that country.

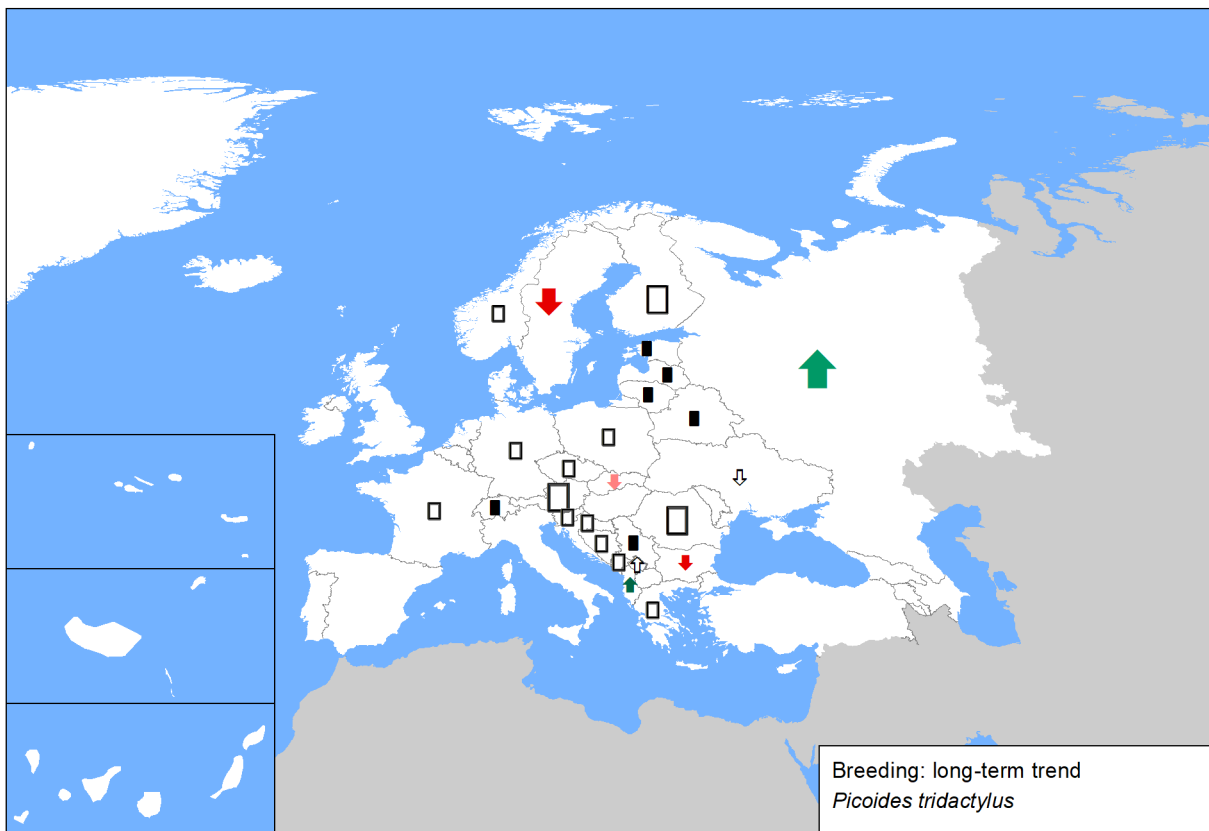
- ↑ Large: ≥10% of the European population
- ↑ Medium: 1–9% of the European population
- ↑ Small: <1% of the European population

The designation of geographical entities and the presentation of the material do not imply the expression of any opinion whatsoever on the part of IUCN or BirdLife International concerning the legal status of any country, territory or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

**Figure 1.** Breeding population sizes and short-term trends across Europe.



**Figure 2.** Breeding population sizes and long-term trends across Europe.



*Picoides tridactylus* (Three-toed Woodpecker)

## Sources

### Albania

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| <b>Breeding population size:</b> Bino & Xeka pers. obs.  |
| <b>Breeding short-term trend:</b> Bino & Xeka pers. obs. |
| <b>Breeding long-term trend:</b> Bino pers. obs.         |

### Austria

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| <b>Breeding population size:</b> BirdLife Austria, estimate based on a sample of breeding densities from different sites and habitats                                     |
| <b>Breeding short-term trend:</b> BirdLife Austria, unpublished data from <a href="http://www.ornitho.at">www.ornitho.at</a> ; BirdLife Austria, unpublished archive data |
| <b>Breeding long-term trend:</b> BirdLife Austria, unpublished archive data   |

### Belarus

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| <b>Breeding population size:</b> Research work of the National Academy of Sciences of the Republic of Belarus "Dynamics and predictive assessment of changes in the state of populations of the main resource and biocenotically most important bird species in Belarus" |
| <b>Breeding long-term trend:</b> Nikiforov M.E., Kozulin A.V., eds. Belarussian birds at the beginning of XXI century: status, numbers, distribution. - 1997. - Minsk. - 187 p.  |

### Bosnia and Herzegovina

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| <b>Breeding population size:</b> Based on data for EBBA2   |
| <b>Breeding short-term trend:</b> more individual articles e.g published in magazine Bilten mreže posmatrača ptica u Bosni i Hercegovini-see <a href="https://ptice.ba/bs/category/bilteni_/">https://ptice.ba/bs/category/bilteni_/</a> , individual reports (e.g. for EBBA2, projects etc) |

### Bulgaria

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| <b>Breeding population size:</b> Iankov, P. (ed.) 2007 Atlas of Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10, Sofia, BSPB, 679 p. (In Bulgarian and English); National Art. 12 reporting database 2013-2018; Golemansky V. (ed.) 2011. Red Data Book of the Republic of Bulgaria. Digital edition, Vol. 2, Animals. BAS-MOEW, Sofia, <a href="http://e-ecodb.bas.bg/rdb/en/vol2/">http://e-ecodb.bas.bg/rdb/en/vol2/</a> BSPB database Shurulinkov P., G. Stoyanov, E. Komitov, G. Daskalova, A. Ralev (2012) Contribution to the knowledge on distribution, number and habitat preferences of rare and endangered birds in Western Rhodopes Mts. Southern Bulgaria. Strigiformes and Piciformes. Acta zoologica bulgarica., 64(1): 43-56  |
| <b>Breeding short-term trend:</b> Iankov, P. (ed.) 2007 Atlas of Breeding Birds in Bulgaria. Bulgarian Society for the Protection of Birds, Conservation Series, Book 10, Sofia, BSPB, 679 p. (In Bulgarian and English); National Art. 12 reporting database 2013-2018; Golemansky V. (ed.) 2011. Red Data Book of the Republic of Bulgaria. Digital edition, Vol. 2, Animals. BAS-MOEW, Sofia, <a href="http://e-ecodb.bas.bg/rdb/en/vol2/">http://e-ecodb.bas.bg/rdb/en/vol2/</a> BSPB database Shurulinkov P., G. Stoyanov, E. Komitov, G. Daskalova, A. Ralev (2012) Contribution to the knowledge on distribution, number and habitat preferences of rare and endangered birds in Western Rhodopes Mts. Southern Bulgaria. Strigiformes and Piciformes. Acta zoologica bulgarica., 64(1): 43-56 |
| <b>Breeding long-term trend:</b> Nankinov D., S. Simeonov, T. Michev, B. Ivanov 1997 Fauna of Bulgaria vol.26, Aves, part 2. BAS, Sofia. Red Data Book of PR Bulgaria (1985) BAS, Sofia.  |

### Croatia

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| <b>Breeding population size:</b> Zavod za ornitologiju (Sanja Barišić, Davor Čiković, Jelena Kralj, Goran Sušić, Vesna Tutiš), Dragan Radović, Ivan Budinski, Robert Crnković, Antun Delić, Dubravko Dender, Vlatka Dumbović, Ivan Darko Grlica, Bariša Ilić, Luka Jurinović, Davor Krnjeta, Krešimir Leskovar, Duje Lisičić, Ivica Lolić, Gordan Lukač. Kristijan Mandić, Krešimir Mikulić, Tibor Mikuska, Gvido Piasevoli, Andrej Radalj, Zlatko Ružanović, Vlatka Ščetarić, Mirko Šetina, Adrian Tomik (2015): Procjene brojnosti za SPA područja. Državni zavod za zaštitu prirode, Zagreb |
| <b>Breeding short-term trend:</b> no data available  |
| <b>Breeding long-term trend:</b> no data available   |

### Czechia

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| <b>Breeding population size:</b> Štastný et Bejček in prep. - Atlas hnízdního rozšíření ptáků ČR 2014-2017 |
| <b>Breeding short-term trend:</b> expert opinion   |
| <b>Breeding long-term trend:</b> expert opinion  |

### Estonia

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| <b>Breeding population size:</b> Estonian Working Group on Bird Status and Numbers   |
| <b>Breeding short-term trend:</b> [1] Estonian Working Group on Bird Status and Numbers [2] Monitoring of woodpeckers. <a href="http://seire.keskkonnainfo.ee/index.php?option=com_content&amp;view=article&amp;id=2058&amp;Itemid=371">http://seire.keskkonnainfo.ee/index.php?option=com_content&amp;view=article&amp;id=2058&amp;Itemid=371</a> |
| <b>Breeding long-term trend:</b> [1] Estonian Working Group on Bird Status and Numbers   |

### Finland

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| <b>Breeding population size:</b> Lehikoinen, A., Below, A., Jukarainen, A., Laaksonen, T., Lehtiniemi, T., Mikkola-Roos, M., Pessa, J., Rajasärkkä, A., Rusanen, P., Sirkiä, P., Tiainen, J. & Valkama, J. 2019: Suomen lintujen pesimäkantojen koot. – Linnut-vuosikirja 2018: 38-45. |
| <b>Breeding short-term trend:</b> Bird monitoring schemes of the Finnish Museum of Natural History, University of Helsinki.  |
| <b>Breeding long-term trend:</b> Bird monitoring schemes of the Finnish Museum of Natural History, University of Helsinki.   |

### France

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| <b>Breeding population size:</b> LPO Franche-Comté [collectif] 2018. Paul, J-P. (2018) Pic tridactyle ( <i>Picoides tridactylus</i> ), in LPO Franche-Comté [collectif], 2018 Les Oiseaux de Franche-Comté. Répartition, tendances et conservation. Biotop, Mèze, 480 p, Biotope, Mèze480 |
|---|

## *Picoides tridactylus* (Three-toed Woodpecker)

### Germany

**Breeding population size:** Gerlach et al. (in Vorb.): Vögel in Deutschland – 2019. Dachverband Deutscher Avifaunisten, Bundesamt für Naturschutz und Länderarbeitsgemeinschaft der Vogelschutzwarten, Münster.

**Breeding short-term trend:** Gerlach et al. (in Vorb.): Vögel in Deutschland – 2019. Dachverband Deutscher Avifaunisten, Bundesamt für Naturschutz und Länderarbeitsgemeinschaft der Vogelschutzwarten, Münster.

**Breeding long-term trend:** Gerlach et al. (in Vorb.): Vögel in Deutschland – 2019. Dachverband Deutscher Avifaunisten, Bundesamt für Naturschutz und Länderarbeitsgemeinschaft der Vogelschutzwarten, Münster.

### Greece

**Breeding population size:** 1) BirdLife International (2017). European birds of conservation concern: populations, trends and national responsibilities. Cambridge. UK: BirdLife International. ISBN 978-1-912086-00-9 2) Δημαλέξης, Τ., Καστριτής, Θ., Γρίβας, Κ., Μανωλόπουλος, Α., Καρδακάρη, Ν., Κακαλής, Λ., Ξηρουχάκης, Σ., Τσαϊτουριδης, Χ., Παπαζογλου, C. & Barov, B. 2009. Προσδιορισμός συμβατών δραστηριοτήτων σε σχέση με τα είδη χαρακτηρισμού των Ζωνών Ειδικής Προστασίας της ορνιθοπανίδας. Παραδοτέο 8. Οδηγός οικολογικών απαιτήσεων, απειλών και ενδεδειγμένων μέτρων για τα είδη χαρακτηρισμού. 3) Natura Viewer (<http://natura2000.eea.europa.eu/#>). 4) Βλάχος Χ., Μπίρτσας Π., Θωμαΐδης Χ., Χατζηνίκος Ε., Μποντζώρος Β., Μπραζιλιώτης Σ., Κόντος Κ., Βλαχάκη Δ., Δεδουσοπούλου Ε., Κιούσης Δ., Ξένος Α., Στεφάνου Λ.Μ., Κασάμπαλης Δ., και Μελικώκη Κ. (Συντονιστές έκδοσης). 2015. Γ' Φάση της Μελέτης 9 «Εποπτεία και Αξιολόγηση της Κατάστασης Διατήρησης Ειδών Ορνιθοπανίδας στην Ελλάδα» ΥΠΑΠΕΝ, Αθήνα, Σύμπραξη Γραφείων Μελετών «"Φ.ΦΑΣΟΥΛΑΣ-Ν.ΜΑΝΤΖΙΟΣ" Ε.Ε. – ΡΟΔΟΥΛΑ ΚΩΝΣΤΑΝΤΙΝΙΔΟΥ ΤΟΥ ΓΕΩΡΓΙΟΥ – "ΑΘ.ΤΖΑΚΟΠΟΥΛΟΣ ΚΑΙ ΣΙΑ" Ε.Ε.», Θεσσαλονίκη. (5) Portolou, D., Bourdakis, S., Vlachos, C., Kastritis, T., and Dimalexis. T. (eds.) 2009. Important Bird Areas of Greece: Priority sites for conservation. Hellenic Ornithological Society. Athens. 6) Dimalexis, T., Bousbouras, D., Kastritis, T., Manolopoulos, A. & Saravia, V. (eds.) 2009. Evaluation of 69 Important Bird Areas as Special Protection Areas. Hellenic Ministry for the Environment, Physical Planning and Public Works, Athens.

**Breeding short-term trend:** No data

**Breeding long-term trend:** no data available

### Kosovo

**Breeding population size:** Qenan Maxhuni

**Breeding short-term trend:** Qenan Maxhuni

**Breeding long-term trend:** Puzovic, S. et al. (2004): Birds of Serbia and Montenegro – Size of nesting populations. I trends: 1990-2002. Ciconia 12

### Latvia

**Breeding population size:** Expert: Madars Bergmanis, [bmadars@gmail.com](mailto:bmadars@gmail.com)

**Breeding short-term trend:** Aunins A., Mardega I. 2018. [Countrywide monitoring of the common birds. Final report for the year 2018.] (in Latvian) Latvian Ornithological society.

**Breeding long-term trend:** Strazds M., Priednieks J., Vaverins G. 1994. [Size of Latvian bird populations.] (in Latvian) In: Putni dabā, 4: 3–18 Expert: Madars Bergmanis, [bmadars@gmail.com](mailto:bmadars@gmail.com)

### Lithuania

**Breeding population size:** Expert working group of the Lithuanian Ornithological Society ([lod@birdlife.lt](mailto:lod@birdlife.lt)) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES)

**Breeding short-term trend:** Expert working group of the Lithuanian Ornithological Society ([lod@birdlife.lt](mailto:lod@birdlife.lt)) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES)

**Breeding long-term trend:** Logminas, V. (ed.). 1991. Lietuvos fauna: paukščiai. Vilnius: „Mokslas“. Kurlavičius, P. (ed.) 2006. Lietuvos perinčių paukščių atlasas. Kaunas: „Lututė“. Expert working group of the Lithuanian Ornithological Society ([lod@birdlife.lt](mailto:lod@birdlife.lt)) BirdLife International/European Bird Census Council. 2000. European bird populations: estimates and trends. Cambridge, UK: BirdLife International (BirdLife Conservation Series No. 10). Raudonikis L. 2004. Important Bird Areas of the European Union Importance in Lithuania. Lithuanian Ornithological Society & Institute of Ecology of Vilnius University. Lutute, Vilnius. Jusys, V., Karalius, S., Raudonikis, L. 2012. Lietuvos paukščių pažinimo vadovas. Kaunas: „Lututė“. Ministry of Environment of the Republic of Lithuania. 2012. Status and trends of bird populations (Article 12, Birds Directive 2009/147/EC) National Summary 2008-2012 Lithuania. Expert working group of the Lithuanian Ornithological Society ([lod@birdlife.lt](mailto:lod@birdlife.lt)) 2015-2018. Lietuvos perinčių paukščių atlaso duomenų bazė (Lithuanian Breeding Birds Atlas Database). Vilnius. Ministry of Environment of the Republic of Lithuania. 2016-2018. Leidinio "Lietuvos raudonoji knyga" parengimo paslaugos (Red data book of Lithuania). (Agreement No VPS-2016-104-ES)

### Montenegro

**Breeding population size:** Rubinić, B., Sackl, P. & Gramatikov, M. (2019): Conserving of wild birds in Montenegro. The first inventory of potential Special Protection Areas in Montenegro. Aam Consulting. Budapest xiii + 328 pp.

### Norway

**Breeding population size:** Shimmings P. & Øien, I.J. 2015. Bestandsestimer og trender for norske hekkefugler. NOF-rapport 2015-2.

**Breeding long-term trend:** Shimmings, P. & Øien, I.J. 2015. Bestandsestimer for norske hekkefugler. NOF Rapport 2-2015. 268 pp.

### Poland

**Breeding population size:** Chylarecki P., Chodkiewicz T., Neubauer G., Sikora A., Meissner W., Woźniak B., Wylegała P., Ławicki Ł., Marchowski D., Betleja J., Bzoma S., Cenian Z., Górski A., Korniluk M., Moczarska J., Ochocińska D., Rubacha S., Wieloch M., Zielińska M., Zieliński P., Kuczyński L. 2018. Trendy liczebności ptaków w Polsce. GIOŚ, Warszawa.

**Breeding short-term trend:** State Environmental Monitoring / Chief Inspectorate of Environmental Protection (survey: MRD)

**Breeding long-term trend:** Chief Inspectorate of Environmental Protection & Polish Society for the Protection of Birds (OTOP) / BirdLife Poland

## *Picoides tridactylus* (Three-toed Woodpecker)

### Romania

**Breeding population size:** Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database, Rombird (Romanian Rarity Commission) Database

**Breeding short-term trend:** Romanian Common Bird Monitoring Programme, Breeding Waterbird Monitoring Programme, Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database

**Breeding long-term trend:** Ornitodata (Romanian Ornithological Society) Database, OpenBirdMaps (Milvus Group) Database, Rombird (Romanian Rarity Commission) Database

### Russia

**Breeding population size:** Voltzit & Kalyakin 2013-2019; Database of the project on Atlas of breeding birds of European Russia

**Breeding long-term trend:** Fridman 2018

### Serbia

**Breeding population size:** EBBA2 project; Puzović, S., Radišić, D., Ružić, M., Rajković, D., Radaković, M., Pantović, U., Janković, M., Stojnić, N., Šćiban, M., Tucakov, M., Gergelj, J., Sekulić, G., Agošton, A. & Raković, M. 2015. Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013. Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.

**Breeding short-term trend:** Puzović, S., Radišić, D., Ružić, M., Rajković, D., Radaković, M., Pantović, U., Janković, M., Stojnić, N., Šćiban, M., Tucakov, M., Gergelj, J., Sekulić, G., Agošton, A. & Raković, M. 2015. Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013. Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.

**Breeding long-term trend:** Puzović, S., Radišić, D., Ružić, M., Rajković, D., Radaković, M., Pantović, U., Janković, M., Stojnić, N., Šćiban, M., Tucakov, M., Gergelj, J., Sekulić, G., Agošton, A. & Raković, M. 2015. Birds of Serbia: Breeding Population Estimates and Trends for the Period 2008-2013. Bird protection and study society of Serbia, and Department of Biology and Ecology, Faculty of Sciences, University of Novi Sad, Novi Sad.

### Slovakia

**Breeding population size:** Coordinatory group for reporting 2019. Karaska D., Trnka A., Krištin A., Ridžoň J.: Chránené vtáčie územia Slovenska. ŠOP SR Banská Bystrica, 2015.

**Breeding short-term trend:** Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. monitoring of common species.

**Breeding long-term trend:** Coordinatory group for reporting 2019, AVES-Symfony Database 2013-2018, KIMS Database 2013-2018. EU birds mapping (SNC SR)

### Slovenia

**Breeding population size:** Mihelič T., Kmecl P., Denac K., Koce U., Vrezec A., Denac D. (eds.) (2019): Atlas ptic Slovenije. Popis gnezdičk 2002–2017. DOPPS, Ljubljana.

**Breeding short-term trend:** The negative trend (decrease of 10-30% in the period 2011-2018) was estimated based on national monitoring results at SPA Snežnik-Pivka, SPA Julijci, SPA Kočevsko and SPA Pohorje, and also on survey results within the project LIFE Kočevsko. See the following references: Denac K. (2015): Popis triprstega in belohrbtega detla na SPA Kočevsko v letu 2015. Poročilo. Projekt »Ohranjanje Natura 2000 območij na Kočevskem - LIFE KOČEVSKO (LIFE13 NAT/SI/000314)«. Naročnik: Zavod za gozdove Slovenije. DOPPS, Ljubljana. Bertonec I., Perušek M., Hudoklin A., Bitorajc Z. (2015): Popis triprstega detla *Picoides tridactylus* na območju Natura 2000 Kočevsko. Zavod za gozdove Slovenije, Območna enota Kočevje, Kočevje. Perušek M. (2016): Ožji gnezdilni habitat in hranjenje mladičev triprstega detla *Picoides tridactylus* na Kočevskem. Zavod za gozdove Slovenije, Območna enota Kočevje, Kočevje. Denac K. (2017): Triprsti detel *Picoides tridactylus*. pp. 118-130. In: Denac K., Kmecl P., Mihelič T., Jančar T., Denac D., Bordjan D.: Monitoring populacij izbranih ciljnih vrst ptic na območjih Natura 2000 v letu 2017. Poročilo. Naročnik: Ministrstvo za kmetijstvo, gozdarstvo in prehrano. DOPPS, Ljubljana. Kuretič M., Bitorajc Z., Kotnik T., Prijanovič P., Peteržinek S. (2018): Popis belohrbtega (*Dendrocopos leucotos*) in triprstega detla (*Picoides tridactylus*) na območju Natura 2000 Kočevsko. Zavod za gozdove Slovenije, Območna enota Kočevje, Kočevje. Denac K. (2018): Triprsti detel *Picoides tridactylus*. pp. 141-151. In: Denac K., Jančar T., Božič L., Mihelič T., Koce U., Kmecl P., Kljun I., Denac D., Bordjan D. (2018): Monitoring populacij izbranih ciljnih vrst ptic na območjih Natura 2000 v letu 2018 in sinteza monitoringa 2016-2018. Poročilo. Naročnik: Ministrstvo za kmetijstvo, gozdarstvo in prehrano. DOPPS, Ljubljana.

**Breeding long-term trend:** There are no sources for this information.

### Sweden

**Breeding population size:** Ottosson, U., Ottvall, R., Elmberg, J., Green, M., Gustafsson, R., Haas, F., Holmqvist, N., Lindström, Å., Nilsson, L., Svensson, M., Svensson, S. & Tjernberg, M. 2012. Fåglarna i Sverige – antal och förekomst. SOF, Halmstad. Swedish Bird Survey. BirdLife Sverige, Annual Bird reports.

**Breeding short-term trend:** Svensk fågeltaxering - Swedish Bird Survey

**Breeding long-term trend:** Svensk fågeltaxering - Swedish Bird Survey

### Switzerland

**Breeding population size:** Knaus, P., S. Antoniazza, S. Wechsler, J. Guélat, M. Kéry, N. Strebel & T. Sattler (2018): Swiss Breeding Bird Atlas 2013–2016. Distribution and population trends of birds in Switzerland and Liechtenstein. Swiss Ornithological Institute, Sempach.

**Breeding short-term trend:** <https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/>

**Breeding long-term trend:** <https://www.vogelwarte.ch/en/projects/population-trends/breeding-population-indices/>

### Ukraine

**Breeding population size:** Atlas work, non-published data

## Bibliography

- Bird, J. P., Martin, R., Akçakaya, H. R., Gilroy, J., Burfield, I. J., Garnett, S. G., Symes, A., Taylor, J., Sekercioglu, Ç. H. and Butchart, S. H. M. 2020. Generation lengths of the world's birds and their implications for extinction risk. *Conservation Biology* 34(5): 1252-1261. DOI: 10.1111/cobi.13486.
- BirdLife International. 2004. *Birds in Europe: population estimates, trends and conservation status*. BirdLife International, Cambridge, U.K.
- Gorman, G. 2014. *Woodpeckers of the World: the Complete Guide*. Christopher Helm, London.
- Heath, M. and Tucker, G. 1994. Birds in Europe. *World Birdwatch* 16: 9-13.
- Hutto, R. L. 1995. Composition of bird communities following stand-replacement fires in northern Rocky Mountain (U.S.A.) conifer forests. *Conservation Biology* 9(5): 1041-1058.
- Leonard, D. L. J. 2001. Three-toed Woodpecker (*Picoides tridactylus*). In: Poole, A.; Gill, F. (ed.), *The birds of North America, The Birds of North America*, Philadelphia, Philadelphia, U.S.A.
- Winkler, H. and Christie, D. 2002. Three-toed Woodpecker (*Picoides tridactylus*). In: del Hoyo, J., Elliott, A., Sargatal, J., Christie, D.A. and de Juana, E. (eds), *Handbook of the Birds of the World Alive*, Lynx Edicions, Barcelona.
- Winkler, H.; Christie, D. A.; Nurney, D. 1995. *Woodpeckers: a guide to the woodpeckers, piculets and wrynecks of the world*. Pica Press, Robertsbridge, U.K.