Appendix 2.2: The reference list for the trait database of European butterfly species (Appendix 2.1). For more information about the formatting of this reference list see Chapter 2.

Abbreviation	Author(s)	Date	Title
AP	Paolucci, Paolo	2013	Butterflies and burnets of the Alps and their larvae, pupae and cocoons
B	Binks, F.A.	1992	Ecologische atlas van de dagvlinders van Noordwest-Europa
BK	Beneš, J., Konvička, M., Dvořák, J., Fric, Z., Havelda, Z., Pavlíčko, A., Vrabec, V. & Weidenhoffer, Z.	2002	Butterflies of the Czech Republic: distribution and conservation vol 1 + 2
CL	Tikhonov V. V., Stradomsky B. V., Kuznetsov G. V. & Andreev S. A.	2019	Butterflies of the Caucasus and Southern Russia
CRA	Settele, J., Kudrna, O., Harpke, A., Kühn, I., Van Swaay, C., Verovnik, R., Warren, M., Wiemers, M., Hanspach, J., Hickler, T. and Kühn, E., vam Halder I, Veling K, Vliegenthart A, Wynhoff I, & Schweiger O.	2018	Climatic risk atlas of European butterflies
D	Dennis, R.L.	2010	A resource-based habitat view for conservation: butterflies in the British landscape
EL	Lafranchis T.	2004	Butterflies of Europe: new field guide and key
FE	Tutin, T.G. ed.	1976	Flora Europea; Vol. 1-5.
GBB	García-Barros, E., Munguira, M.L., Stefanescu, C. & Vives, A	2013	Fauna Iberica, Lepidoptera: Papilionoidea. Vol. 37.
GBF	García-Barros, E.	N/A	Enrique Garcia-Barros - personal observation in the field
GBU	García-Barros, E.	2013	Unpublished data from GBB (see above)
GP	Pamperis, L.N	1997	The butterflies of Greece
HK	Henriksen, H.J. & Kreutzer, I.B	1982	The butterflies of Scandinavia in nature
IUCN	Various	N/A	IUCN Redlist website pages for each species
KD	Kudrna, O.	1977	A revision of the genus Hipparchia
LF	Lafranchis, T. & Geniez, P.	2000	Les papillons de jour de France, Belgique et Luxembourg et leurs chenilles
LTD	Leonardo Dapporto	N/A	Leonardo Dapporto (personal observation/trait database)
MR	Rowlings, W.	2019	euroButterflies by Matt Rowlings
NS	Newland, D., Still, R., Swash, A. & Tomlinson, D	2015	Britain's Butterflies: A Field Guide to the Butterflies of Britain and Ireland-Fully Revised and Updated Th
PO	Middleton-Welling, J.	N/A	Personal observation
PYR	Wagner W.	2019	Lepidoptera and their ecology
SFR	Settele, J., Steiner, R., Reinhardt, R., Feldmann, R. & Hermann, G.	2015	Schmetterlinge: Die Tagfalter Deutschlands.
T	Tolman, T. & Lewington, R.	2008	Collins Butterfly Guide: New edition
TK	Tshikolovets, V.V.	2011	). Butterflies of Europe & the Mediterranean area. Butterflies of Europe & the Mediterranean area.

Common references

AP- Paolucci, P. (2013). Butterflies and burnets of the Alps and their larvae, pupae and cocoons. WBA-Books.

B- Bink, F.A. (1992). Ecologische atlas van de dagvlinders van Noordwest-Europa. Schuyt.

BK- Beneš, J., Konvička, M., Dvořák, J., Fric, Z., Havelda, Z., Pavlíčko, A., Vrabec, V. & Weidenhoffer, Z. (2002). Butterflies of the Czech Republic: distribution and conservation I, II. SOM, Praha.

CL- Tikhonov V. V., Stradomsky B. V., Kuznetsov G. V. & Andreev S. A. (2019) Butterflies of the Caucasus and Southern Russia, http://www.babochki-kavkaza.ru [Accessed 3rd January 2019].

CRA-Settele, J., Kudrna, O., Harpke, A., Kühn, I., Van Swaay, C., Verovnik, R., Warren, M., Wiemers, M., Hanspach, J., Hickler, T. and Kühn, E., vam Halder I, Veling K, Vliegenthart A, Wynhoff I, & Schweiger O. (2008) Climatic risk atlas of European butterflies. Pensoft, Sofia.

D- Dennis, R.L., (2010). A resource-based habitat view for conservation: butterflies in the British landscape. John Wiley & Sons.

EL- Lafranchis T. (2004). Butterflies of Europe: new field guide and key. Diatheo.

FE- Tutin, T.G. ed. (1976). Flora Europea; Vol. 1-5.

GBB-García-Barros, E., Munguira, M.L., Stefanescu, C. & Vives, A., (2013). Fauna Iberica, Lepidoptera: Papilionoidea. Vol. 37. Museo Nacional de Ciencias Naturales, CSIC, Madrid.

GBF-Enrique García-Barros, field observations.

GBU- Enrique García-Barros, unpublished data from GBB (see above).

GP- Pamperis, L.N. (1997). The butterflies of Greece. Bastas-Plessas Graphic Arts SA.

HK- Henriksen, H.J. & Kreutzer, I.B. (1982). The butterflies of Scandinavia in nature. Skandinavisk bogforlag.

IUCN-The IUCN Redlist of Threatened Species (2019) https://www.iucnredlist.org/ [Accessed on 3rd January 2019].

NOTE: Each IUCN record also has a unique citation on the page for that particular species.

KD- Kudrna, O. (1977). A revision of the genus Hipparchia.

LF/-Lafranchis, T. & Geniez, P. (2000). Les papillons de jour de France, Belgique et Luxembourg et leurs chenilles. Biotope Editions.

LTD-Leonardo Dapporto trait dataset.

MR-Rowlings, M. (2019). euroButterflies by Matt Rowlings, http://www.eurobutterflies.com [Accessed on 3rd January 2019].

NS-Newland, D., Still, R., Swash, A. & Tomlinson, D. (2015). Britain's Butterflies: A Field Guide to the Butterflies of Britain and Ireland-Fully Revised and Updated Third Edition. Princeton University Press.

PO-Personal observation in the field (Joseph Middleton Welling).

PYR-Wagner W. (2019). Lepidoptera and their ecology, http://www.pyrgus.de [Accessed on 3rd January 2019].

SFR- Settele, J., Steiner, R., Reinhardt, R., Feldmann, R. & Hermann, G. (2015). Schmetterlinge: Die Tagfalter Deutschlands. Ulmer.

T- Tolman, T. & Lewington, R. (2008). The most complete guide to the butterflies of Britain and Europe. Collins, London.

TK-Tshikolovets, V.V. (2011). Butterflies of Europe & the Mediterranean area. Butterflies of Europe & the Mediterranean area.

TS-Tim Shreeve, personal communication.

References

Charaxes jasius

Overwintering stage-T

Overwintering location-PYR

Voltinism-T

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment-MR

Egg laying type (small batch)-MR

Egg laying type (single)-LF

Egg laying location -GP

Altitude-T

Flight months (min- May to June and August to October)-T

Flight months (max – March to October)-GP

Adult feeding (animal, mineral)-GBF

Adult feeding (rest)-T

Mate locating type-T

Mate locating location (shrubs)-T

Mate locating location (hilltopping)-Argentona, I. E. S., and Secció de Ciències Naturals. "Hilltopping de les papallones diürnes al turó d'Onofre Arnau (Mataró, Maresme).

Basking site (photos)-MR

Basking type (photos)-MR

Limenitis populi

Overwintering stage- Freiedrich Ekkehard, 'Zur Biologie von Liminentis populi L. (Lep Nymphalidae)' Entomologische Zeitschrift 81, 266-269

Overwintering location- Freiedrich Ekkehard, 'Zur Biologie von Liminentis populi L. (Lep Nymphalidae)' Entomologische Zeitschrift 81, 266-269

Voltinism- T

Forewing length-B

Wingspan-TK

Pupal location-T

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-T

Larval environment-T

Egg laying type -B

Egg laying location-T

Altitude (min)- EL

Altitude (max-) GP

Flight months-T

Adult feeding-B

Mate locating location-PYR

Basking type-GP

Basking site-GP

Limenetis reducta

Overwintering stage-B

Overwintering location-B

Voltinism (min)-T

Voltinism (max)-EL

Forewing length (max)-B

Forewing length (min)-AP

Wingspan-TK

Pupal location-CRA

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-T

Larval environment-CL

Egg laying type -B

Egg laying location-GP

Altitude (min) - EL

Altitude (max) - GP

Flight months (min, max, Feb, April-October)-GP

Flight months (May and September)-EL

Adult feeding (sap honeydew, animal and mineral)-GBB

Adult feeding (others)-B

Mate locating type-CL

Mate locating type (patrolling and territorial perching)-PO

Mate locating location-PO

Basking type-PO

Basking site-PO

Limenitis camilla

Overwintering stage-B

Overwintering location-B

Voltinism-CRA

Forewing length-NS

Wingspan-TK

Pupal location-CRA

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-D

Hostplant growth (type)-D

Hostplant part -T

Hostplant age-D

Larval environment-HK

Hostplant patch size-D

Egg laying type –B

Egg laying location-D

Egg laying aspect-NS

Altitude-T

Flight months (June to July)-BK/HK

Flight months (June to September)-EL

Adult feeding (sap)-GBB

Adult feeding (all others)-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Neptis rivularis

Overwintering stage- Konvicka, M., O. Nedved, and Z. Fric. "Early-spring floods decrease the survival of hibernating larvae of a wetland-inhabiting population of Neptis rivularis (Lepidoptera: Nymphalidae)." Acta Zool Hung 48 (2002): 79-88.

Overwintering location- Konvicka, M., O. Nedved, and Z. Fric. "Early-spring floods decrease the survival of hibernating larvae of a wetland-inhabiting population of Neptis rivularis (Lepidoptera: Nymphalidae)." Acta Zool Hung 48 (2002): 79-88.

Voltinism- Konvicka, M., O. Nedved, and Z. Fric. "Early-spring floods decrease the survival of hibernating larvae of a wetland-inhabiting population of Neptis rivularis (Lepidoptera: Nymphalidae)." Acta Zool Hung 48 (2002): 79-88.

Pupal location (description and photos)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-T

Hostplant age-CL

Egg laying type (photos) -PYR

Egg laying location-CL

Altitude-GP

Flight months (minimum – June to August)-BK

Flight months (maximum – May to August)-T/EL/GP

Adult feeding- Konvicka, M., O. Nedved, and Z. Fric. "Early-spring floods decrease the survival of hibernating larvae of a wetland-inhabiting population of Neptis rivularis (Lepidoptera: Nymphalidae)." Acta Zool Hung 48 (2002): 79-88.

Basking type-GP

Neptis sappho

Overwintering stage-T

Overwintering location-PYR

Voltinism-AP

Forewing length-AP

Wingspan-TK

Pupal location-TK

Hostplant family-TK

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Hostplant age-PYR

Egg laying type -PYR

Egg laying location-PYR

Altitude-GP

Flight months (minimum - May to August)-EL

Flight months (maximum- May to June and July to September)- BK

Adult roosting- T

Basking type-GP

Basking site-GP

Apatura iris

Overwintering stage-T

Overwintering location (liana)-GBB

Overwintering location (other) –B

Voltinism-T

Forewing length (min)-B

Forewing length (max)-NS

Wingspan-TK

Pupal environment-CRA

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age –D

Hostplant patch size-D

Larval environment-B

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude (minimum)-EL

Altitude (maximum)-GP

Flight months (minimum – July to August)-HK

Flight months (maximum – June to August) -T

Adult feeding (herbs)-B

Adult feeding (all others)-D

Egg laying aspect (light)- NS

Mate locating type-Page, R. J. C. "Perching and patrolling continuum at favoured hilltop sites on a ridge: A mate location strategy by the Purple Emperor butterfly Apatura iris."Entomologist''s Record and Journal of Variation 122.2 (2010): 61.

Mate location location-D

Adult roosting-D

Basking type-D

Basking site-D

Apatura ilia

Overwintering stage-T

Overwintering location-B

Voltinism-T

Pupal location-CRA

Forewing length (male min and average)-GBB

Forewing length (max)-GBU

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-T

Larval environment (photos)-B

Egg laying type-B

Egg laying location-SFR

Altitude-GP

Flight months (minimum – June to August) - BK

Flight months (maximum – May to October)-EL

Adult feeding-T

Adult roosting-LF

Basking type (photo)-TK

Basking site-MR

Apatura metis

Overwintering stage-CRA

Overwintering location-PYR

Voltinism (bivoltine)-T/EL

Voltinism (univoltine and bivoltine)-GP

Pupal location-CRA

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-CL

Larval environment (photo)-CL

Egg laying type (photo)-CL

Egg laying location-PYR

Egg laying aspect-PYR

Altitude-T

Flight months-T

Adult feeding (sap?)-T

Adult feeding (rest) -CRA

Adult roosting-T

Mate locating type-PYR

Mate locating location-CRA

Basking type-CL

Basking site (photo)-CL

Araschnia levana

Overwintering stage-T

Overwintering location-B

Voltinism (trivoltine)-EL

Voltinism (univoltine and bivoltine)-AP

Voltinism (bivoltine and trivoltine)-EL

Pual location-HK

Forewing length-NS

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-HK

Larval environment-B

Egg laying type-HK/T

Egg laying type (large clusters)-B

Egg laying location-CRA

Egg laying aspect-NS

Flight months (minimum)-T

Altitude (maximum)-GP

Flight months (minimum – May to June and July to August)-T

Flight months (maximum – April to September)-EL

Adult feeding-B

Adult roosting-"Adult population structure and behaviour of two seasonal generations of the European Map Butterfly, Araschnia levana, species with seasonal polyphenism (Nymphalidae)." Nota Lepidopterologica23.1 (2000): 2-25.

Mate locating type-HK/"Adult population structure and behaviour of two seasonal generations of the European Map Butterfly, Araschnia levana, species with seasonal polyphenism (Nymphalidae)." Nota Lepidopterologica23.1 (2000): 2-25.

Basking site (canopy)-PO

Basking site (ground)-CRA

Basking site (rest?)-HK

Aglais urticae

Overwintering stage-T

Overwintering location-D

Voltinism-T

Pupal location-CRA

Forewing length-NS

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type-NS

Egg laying location-NS

Egg laying aspect-NS

Altitude-T

Flight months (minimum – May to August)-T

Flight months (maximum – February to October and December)-GP

Adult feeding (hern and shrub flowers)-B

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site (bare ground)-PO

Basking site (rest)-D

Nymphalis antiopa

Overwintering stage-B

Overwintering location-B

Voltinism-T

Pupal location (field layer)-NS

Forewing length-NS

Wingpspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Larval environment-SFR

Egg laying type-SFR

Egg laying location-CRA

Altitude-T

Flight months (minimum – June to July)-T

Flight months (maximum – March to May and May to October)-GP

Adult feeding (animal, honeydew, mineral)-GBB

Adult feeding (shrubs, decaying plants, sap)-B

Adult feeding (herbs?)-SFR

Mate locating type--Bitzer R and Shaw K (1983) Territorial behaviour of Nymphalis antiopa and Polygonia comma Journal of the Lepidopterists' Societ!l 37(1), 1983, 1-13

Mate locating location-(edges)-LF

Mate locating location (rest)- Bitzer R and Shaw K (1983) Territorial behaviour of Nymphalis antiopa and Polygonia comma Journal of the Lepidopterists' Societ!l 37(1), 1983, 1-13

Basking type-GP

Basking site-GP

Nymphalis polychloros

Overwintering stage-HK

Overwintering location-HK/B

Voltinism-AP

Pupal location-CRA

Forewing length-NS

Wingpspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type-NS

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (Minimum – May to July)-BK

Flight months (Maximum - January to October)-GP

Adult feeding (sap, animal, mineral)-GBB

Adult feeding (decayed plants)-B

Adult roosting-D

Mate locating type-D

Mate locating location-D

Nymphalis xanthomelas

Overwintering stage-T

Overwintering location-T

Voltinism-T

Forewing length-NS

Wingpspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-CRA

Altitude-T

Flight months-T

Egg laying type-NS

Egg laying location-SFR

Adult feeding- Ômura, Hisashi, and Keiichi Honda. "Feeding responses of adult butterflies, Nymphalis xanthomelas, Kaniska canace and Vanessa indica, to components in tree sap and rotting fruits: synergistic effects of ethanol and acetic acid on sugar responsiveness." Journal of insect physiology 49.11 (2003): 1031-1038.

Basking type (photos)-TK

Basking type (photos)-TK

Nymphalis vaualbum (Nymphalis l-album)

Overwintering stage-CRA

Overwintering location- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Voltinism-T

Pupal location- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Larval environment-CRA

Egg laying type- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Egg laying location (laid on 'twigs' of either shrub or trees)-NS

Altitude-T

Flight months (minimum – May and June)-BK

Flight months (maximum – March to July)-T

Adult feeding- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Adult roosting- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Mate locating type- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Basking type (photo)- TK

Basking site- Gasgoigne Pees, Martin, et al. "The lifecycle of Nymphalis vaualbum ([Denis & Schiffermüller], 1775) in Serbia including new records and a review of its present status in Europe (Lepidoptera: Nymphalidae)." (2014)Nachr. Entomol. Ver. Apollo. N.F. 35, ½ 77-96

Aglais io (Inachis io)

Overwintering stage-T

Overwintering location-B

Voltinism (univoltine)-BK

Voltinism (univoltine to trivoltine)-EL

Pupal location-D

Forewing length-NS

Wingspan-TK

Pupal location-HK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum - March to August)- HK

Flight months (maximum – February to October)-EL

Adult feeding-B

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Aglais ichnusa

Overwintering stage-PYR

Voltinism-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location-PYR

Egg laying aspect-PYR

Altitude-T

Flight months-TK

Adult feeding (photo)-MR

Basking type (photo)-TK

Basking site (photo)-TK

Polygonia c-album

Overwintering stage-T

Overwintering location-D

Overwintering location (shrubs and trees)-CRA

Voltinism (univoltine, bivoltine and trivoltine)-EL

Pupal location-D

Forewing length (min)-AP

Forewing length (max)-NS

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Hostplant age-D

Larval environment (based on photos and host plants)-B

Hostplant patch size-D

Egg laying type-D

Egg laying location –D

Egg laying aspect-D

Altitude-T

Flight months (mimimum – June to July)-HK

Flight months (maximum – February to October and December)-GP

Adult feeding (honeydew, sap)-GBB

Adult feeding (rest)-GP

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking site-D

Polygonia egea

Overwintering stage-T

Overwintering location-CL

Voltinism (univoltine and bivoltine)-AP

Voltinism (bivoltine and trivoltine)-EL

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (bud)-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Egg laying aspect-CL

Altitude-GP

Flight months (minimum – May to October)-T

Flight months (maximum – January to November)-GP

Adult feeding (photo)-GP

Basking type-CRA

Basking site-T

Euphydryas maturna

Overwintering stage (larvae)-T

Overwintering stage (pupae)-HK

Overwintering location-B

Voltinism-CRA

Pupal location-CRA

Voltinism (biennial and univoltine)-T

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Hostplant age- Wahlberg, Niklas. "On the status of the scarce fritillary Euphydryas maturna (Lepidoptera: Nymphalidae) in Finland." Entomologica Fennica 12.4 (2001): 244-250.

Larval environment-HK/B Wahlberg, Niklas. "On the status of the scarce fritillary Euphydryas maturna (Lepidoptera: Nymphalidae) in Finland." Entomologica Fennica 12.4 (2001): 244-250.

Egg laying type- Wahlberg, Niklas. "Comparative descriptions of the immature stages and ecology of five Finnish melitaeine butterfly species (Lepidoptera: Nymphalidae)." Entomologica Fennica 11.3 (2000): 167-174.

Egg laying location –SFR

Egg laying aspect-SFR

Altitude-EL

Flight months (minimum – June to July)-HK

Flight months (maximum – May to July) –T/EL/BK

Adult feeding-B

Adult roosting-T

Mate locating type (territorial perching)-HK

Mate locating location-PYR

Basking site (photo)-TK

Basking site (photo)-TK

Euphydryas intermedia

Overwintering stage-T

Overwintering location-CRA

Voltinism (biennial)-T

Voltinism (univoltine)-AP

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-PYR

Larval environment-PYR

Egg laying type-T

Egg laying location-PYR

Altitude-EL

Flight months-T

Adult feeding-LF

Euphydryas iduna

Overwintering stage-HK/T

Overwintering location- HK?

Overwintering location (within webs, presumably same height as hostplant i.e. swards)-CRA

Voltinism-CRA

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment (based on hostplants)-HK

Altitude-T

Flight months-T

Egg laying type-T

Egg laying location-HK

Mate locating type-HK

Basking type (photo)-TK

Basking site (photo)-TK

Euphydruas cynthia

Overwintering stage-T

Overwintering location-T

Voltinism (biennial)-T

Voltinism (univoltine)-EL

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity- TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment (photos)-PYR

Egg laying type-T

Egg laying location- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Euphydryas cynthia. The IUCN Red List of Threatened Species 2010: e.T161036A5387434. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T161036A5387434.en. Downloaded on 15 November 2019.

Altitude-EL

Adult feeding (photo)-TK

Basking type (photo)-TK

Basking site-CRA

Euphydryas aurinia

Overwintering stage-B

Overwintering location (tall sward)-B

Overwintering location (shrub+liana)-GBB

Forewing length-NS

Voltinism-T

Pupal location-D

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months (minimum – May to June)-HK

Flight months (maximum – April to August) - EL

Adult feeding-GP

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Euphydryas desfontainii

Overwintering stage-CRA

Overwintering location-CRA

Voltinism- Pennekamp, Frank, Eva Monteiro, and Thomas Schmitt. "The larval ecology of the butterfly Euphydryas desfontainii (Lepidoptera: Nymphalidae) in SW-Portugal: food plant quantity and quality as main predictors of habitat quality."Journal of insect conservation 17.1 (2013): 195-206.

Pupal location- Frank Pennekamp (Personal Communication)

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part- Pennekamp, Frank, Eva Monteiro, and Thomas Schmitt. "The larval ecology of the butterfly Euphydryas desfontainii (Lepidoptera: Nymphalidae) in SW-Portugal: food plant quantity and quality as main predictors of habitat quality."Journal of insect conservation 17.1 (2013): 195-206.

Hostplant age- Pennekamp, Frank, Eva Monteiro, and Thomas Schmitt. "The larval ecology of the butterfly Euphydryas desfontainii (Lepidoptera: Nymphalidae) in SW-Portugal: food plant quantity and quality as main predictors of habitat quality."Journal of insect conservation 17.1 (2013): 195-206.

Larval environment- Frank Pennekamp (Personal Communication)

Hostplant patch size- Frank Pennekamp (Personal Communication)

Egg laying type- Pennekamp, Frank, Eva Monteiro, and Thomas Schmitt. "The larval ecology of the butterfly Euphydryas desfontainii (Lepidoptera: Nymphalidae) in SW-Portugal: food plant quantity and quality as main predictors of habitat quality."Journal of insect conservation 17.1 (2013): 195-206.

Egg laying location- Pennekamp, Frank, Eva Monteiro, and Thomas Schmitt. "The larval ecology of the butterfly Euphydryas desfontainii (Lepidoptera: Nymphalidae) in SW-Portugal: food plant quantity and quality as main predictors of habitat quality."Journal of insect conservation 17.1 (2013): 195-206.

Egg laying aspect- Pennekamp, Frank, Eva Monteiro, and Thomas Schmitt. "The larval ecology of the butterfly Euphydryas desfontainii (Lepidoptera: Nymphalidae) in SW-Portugal: food plant quantity and quality as main predictors of habitat quality."Journal of insect conservation 17.1 (2013): 195-206.

Altitude (minimum)-EL

Altitude (maximum)-T

Flight months-T

Adult feeding- Frank Pennekamp (Personal Communication)

Adult roosting- Frank Pennekamp (Personal Communication)

Mate locating type- Frank Pennekamp (Personal Communication)

Mate locating location- Frank Pennekamp (Personal Communication)

Basking type- Frank Pennekamp (Personal Communication)

Basking site- Frank Pennekamp (Personal Communication)

Melitaea cinxia

Overwintering stage-T

Overwintering location (short sward)-GBB

Overwintering location (rest)-T

Voltinism-EL

Pupal environment-HK

Forewing length-NS

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant age (immature)-HK

Hostplant age (mature)-D

Larval environment- Wahlberg (2000), 'Comparitive descriptions of the immature stages and ecology of five melatine butterfly species' ENTOMOL. FENNICA Vol. 11 167-174/HK

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum – June and July)-HK

Flight months (maximum – March to August) – GP

Flight months (September)-EL

Adult feeding (photo)-NS

Adult roosting-D

Mate location strategy-Wahlberg (2000), 'Comparitive descriptions of the immature stages and ecology of five melatine butterfly species' ENTOMOL. FENNICA Vol. 11 167-174/D/HK

Basking type-D

Basking site-D

Melitaea arduinna

Overwintering stage-T

Overwintering location- Gascoigne-Pees, M., et al. "Notes on the lifecycle of Melitaea arduinna (Esper, 1783)(“Freyer’s Fritillary”)(Lepidoptera: Nymphalidae) with further records from SE Serbia." Nachrichten des entomologischen Vereins Apollo 33.1 (2012): 9-14.

Voltinism-T

Pupal location-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-T

Larval environment-T

Hostplant age- Gascoigne-Pees, M., et al. "Notes on the lifecycle of Melitaea arduinna (Esper, 1783)(“Freyer’s Fritillary”)(Lepidoptera: Nymphalidae) with further records from SE Serbia." Nachrichten des entomologischen Vereins Apollo 33.1 (2012): 9-14.

Egg laying type-T

Egg laying location- Gascoigne-Pees, M., et al. "Notes on the lifecycle of Melitaea arduinna (Esper, 1783)(“Freyer’s Fritillary”)(Lepidoptera: Nymphalidae) with further records from SE Serbia." Nachrichten des entomologischen Vereins Apollo 33.1 (2012): 9-14.

Egg laying aspect- Gascoigne-Pees, M., et al. "Notes on the lifecycle of Melitaea arduinna (Esper, 1783)(“Freyer’s Fritillary”)(Lepidoptera: Nymphalidae) with further records from SE Serbia." Nachrichten des entomologischen Vereins Apollo 33.1 (2012): 9-14.

Altitude (minimum)-T

Altitude (maximum)-GP

Flight months (minimum – May to July)-GP

Flight months (maximum – May to August)-EL/T

Adult feeding- Gascoigne-Pees, M., et al. "Notes on the lifecycle of Melitaea arduinna (Esper, 1783)(“Freyer’s Fritillary”)(Lepidoptera: Nymphalidae) with further records from SE Serbia." Nachrichten des entomologischen Vereins Apollo 33.1 (2012): 9-14.

Basking type (photos)-TK

Basking site (photos)-TK

Melitaea phoebe

Overwintering stage-B

Overwintering location-B

Voltinism-T

Pupal location-T

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-T

Larval environment-B

Egg laying type-B

Egg laying location-SFR

Altitude-T

Flight months (minimum – June to July)-BK

Flight months (maximum- March to September)-GP

Adult feeding (mineral)-GBB

Adult feeding (rest)-B

Adult roosting- János Tóth (Personal communication)

Mate locating type-CL

Mate locating location-PO

Basking site (bare ground)-PO

Basking site (rest)-GP

Basking site (photos)-GP

Melitaea ornata

Overwintering stage- János Tóth (Personal communication)

Overwintering location- János Tóth (Personal communication)

Voltinism--Tóth, J. P., and Z. Varga. "Morphometric study on the genitalia of sibling species Melitaea phoebe and M. telona (Lepidoptera: Nymphalidae)." Acta Zoologica Academiae Scientiarum Hungaricae 56.3 (2010): 273-282.

Pupal location-GP

Forewing length- János Tóth (Personal communication)

Wingspan-TK

Hostplant family- Tóth, János P., et al. "Distribution of the Eastern knapweed fritillary (Melitaea ornata Christoph, 1893)(Lepidoptera: Nymphalidae): past, present and future." Journal of insect conservation 17.2 (2013): 245-255.

Hostplant specificity- Tóth, János P., et al. "Distribution of the Eastern knapweed fritillary (Melitaea ornata Christoph, 1893)(Lepidoptera: Nymphalidae): past, present and future." Journal of insect conservation 17.2 (2013): 245-255.

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part- János Tóth (Personal communication)

Larval environment- János Tóth (Personal communication)

Egg laying type- János Tóth (Personal communication)

Egg laying location- János Tóth (Personal communication)

Adult feeding-GP

Adult roosting- János Tóth (Personal communication)

Altitude-GP

Flight months-GP

Basking site- János Tóth (Personal communication)

Melitaea celadussa

Overwintering stage- Villalta, Julian S. "Ecological trends in endemic Mediterranean butterflies." Bulletin of Insectology 63.2 (2010): 161-170.

Overwintering location-GBB

Voltinism, Lopez-Villalta, Julian S. "Ecological trends in endemic Mediterranean butterflies." Bulletin of Insectology 63.2 (2010): 161-170.

Forewing length (male min and average)-GBB

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Altitude-T

Flight months-T

Adult feeding-GBF

Melitaea aetherie

Overwintering stage-T

Voltinism-T

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part- García-Villanueva, V., Moreno Tamaurejo, J.A., Vazquez Prado, F. M., Nieto Manzano, M.A. y Novoa Pérez, J.M., 2008. Melitaea aetherie (Hübner [1826]) en la provincia de Badajoz: nuevos datos sobre su biología y distribución (Lepidoptera: Nymphalidae). Boletín de la Sociedad Entomológica Aragonesa 42: 279-288.

Egg laying type-T

Egg laying location- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Melitaea aetherie. The IUCN Red List of Threatened Species 2015: e.T174201A53719758. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174201A53719758.en. Downloaded on 15 November 2019.

Altitude (minimum)-EL

Altitude (maximum)-T

Flight months-T

Adult feeding (mineral)-GBF

Adult feeding (rest - photo)-TK

Basking type (photo)-TK

Basking site (photo)-TK

Melitaea didyma

Overwintering stage-T

Overwintering location-B

Voltinism (univoltine to trivoltine)-CRA

Pupation location-T

Forewing length-B

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Larval environment-SFR

Egg laying type-T

Egg laying location-SFR

Altitude-T

Flight months (minimum – May to July)-BK

Flight months (maximum – March to October) -T

Adult feeding (small herbs)-PO

Adult feeding (rest)-B

Adult roosting-PO

Mate locating type-PO

Mate locating location-PO

Flight months-BK

Basking type-PO

Basking site-PO

Melitaea deserticola

Voltinism-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-T

Flight months-T

Basking type (photo)-TK

Melitaea trivia

Overwintering stage-T

Overwintering location-T

Voltinism (univoltine and bivoltine)-BK

Voltinism (bivoltine and trivoltine/multivoltine)-GP

Pupal location-T

Forewing length-AP

Forewing length (minimum and average)-GBB

Forewing length (maximum)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CL

Egg laying type-PYR

Egg laying location (photos)-PYR

Altitude-GP

Flight months (minimum – June to July)- BK

Flight months (maximum – March to October) - GP

Adult feeding (mineral)-GBF

Adult feeding (rest)-GP

Mate locating type-CL

Mare locating location-CL

Basking type-CL

Basking site (short herbs)-PYR

Basking site (bare ground)-CL

Melitaea diamina

Overwintering stage-T

Overwintering location-B

Voltinism (univoltine)-T

Voltinism (bivoltine)-CRA

Pupal location- Wahlberg, Niklas. "The life history and ecology of Melitaea diamina (Nymphalidae) in Finland." Nota lepidopterologica 20 (1997): 70-81./HK

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-'Comparitive descriptions of the immature stages and ecology of five melatine butterfly species' ENTOMOL. FENNICA Vol. 11 167-174

Hostplant patch size-HK

Egg laying type-HK

Egg laying location-LF

Egg laying aspect –NS

Altitude-GP

Flight months (minimum – June)-HK

Flight months (maximum – April to September) -EL

Adult feeding (animal)-GP

Adult feeding (mineral)-GBB

Adult feeding (herb)-B

Mate locating type- Wahlberg, Niklas. "The life history and ecology of Melitaea diamina (Nymphalidae) in Finland." Nota lepidopterologica 20 (1997): 70-81.

Mate locating location- Wahlberg, Niklas. "The life history and ecology of Melitaea diamina (Nymphalidae) in Finland." Nota lepidopterologica 20 (1997): 70-81.

Basking type (photo)-TK

Basking site-HK/GP

Melitaea athalia

Overwintering stage-T

Overwintering location-D

Voltinism (univoltine)-T

Voltinism (bivoltine)-CRA

Pupal location-D

Forewing length-NS

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Hostplant age-D

Larval environment-'Comparitive descriptions of the immature stages and ecology of five melatine butterfly species' ENTOMOL. FENNICA Vol. 11 167-174

Hostplant patch size-D

Egg laying type-T

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months-T

Adult feeding-B

Adult roosting-D

Mate locating type-D

Mate locating location-HK

Basking site-D

Basking location-D

Melitaea deione

Overwintering stage-T

Overwintering location-GBB

Voltinism (univoltine)-EL

Voltinism (bivoltine)-T

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment -Templado, J., 1976. Datos biológicos sobre Melitaea deione (Geyer) (Lep. Nymphalidae). Boletín de la Estación Central de Ecología 9: 97-101.

Egg laying type-T

Egg laying location (photos)-PYR

Altitude-EL

Flight months (minimum – April to May and July)-T

Flight months (maximum – May to September) -EL

Adult feeding (mineral)-GBF

Adult feeding (rest- photo)-MR

Basking type (photo)-TK

Basking site-MR

Melitaea varia

Overwintering stage-T

Voltinism (biennial)-CRA

Voltinism (univoltine)-T

Pupal location-CRA

Forewing length (male min and average)-GBB

Forewing length (rest)-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-PYR

Egg laying type-T

Egg laying location-LF

Egg laying aspect-LF

Altitude-T

Flight months-T

Adult roosting-PO

Mate locating type (patrolling) –LF

Mate locating type (territorial perching)-PO

Mate locating location (bare earth/rock)-PO

Mate locating location (herbs and grasses)--LF

Basking type-PO

Basking site-PO

Melitaea parthenoides

Overwintering stage-T

Voltinism-T

Pupal location-B

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Larval environment-B

Egg laying type (small clusters)-T

Egg laying type (large clusters)-B

Egg laying location (under leaves)- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Melitaea parthenoides. The IUCN Red List of Threatened Species 2010: e.T173315A6989319. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173315A6989319.en. Downloaded on 15 November 2019.

Egg laying aspect-IUCN

Altitude-EL

Flight months (minimum – June to July) -T

Flight months (maximum – May to September) –T/EL

Adult feeding (animal and mineral)-GBB

Adult feeding (herbs)-PO

Adult feeding (rest)-B

Adult roosting-PO

Mate locating type-PO

Mate locating location-PO

Basking type-PO

Basking site-PO

Melitaea aurelia

Overwintering stage-B

Overwintering location-T

Voltinism-T

Pupal location-B

Forewing length-B

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment-B

Hostplant patch size- Eichel, Stefan, and Thomas Fartmann. "Management of calcareous grasslands for Nickerl's fritillary (Melitaea aurelia) has to consider habitat requirements of the immature stages, isolation, and patch area." Journal of Insect Conservation 12.6 (2008): 677-688.

Egg laying type-T

Egg laying location- Eichel, Stefan, and Thomas Fartmann. "Management of calcareous grasslands for Nickerl's fritillary (Melitaea aurelia) has to consider habitat requirements of the immature stages, isolation, and patch area." Journal of Insect Conservation 12.6 (2008): 677-688.

Egg laying aspect- Eichel, Stefan, and Thomas Fartmann. "Management of calcareous grasslands for Nickerl's fritillary (Melitaea aurelia) has to consider habitat requirements of the immature stages, isolation, and patch area." Journal of Insect Conservation 12.6 (2008): 677-688.

Altitude (minimum)-EL

Altitude (maximum)-GP

Flight months-T

Adult feeding-B

Basking type (photos)-PYR

Basking site (photos)-PYR

Melitaea britomartis

Overwintering stage-T

Overwintering location-HK

Voltinism-HK

Pupal location-HK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-B

Larval environment-B

Egg laying type-T

Egg laying location (photo)-PYR

Altitude-EL

Flight months (minimum – June to July)-HK/BK

Flight months (maximum – May to August) - EL

Adult feeding-B

Mate locating location-HK

Basking type (photo)-TK

Basking site (photo)-TK

Melitaea asteria

Overwintering stage-T

Voltinism (biennial)-T

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-PYR

Egg laying type-van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Melitaea asteria. The IUCN Red List of Threatened Species 2010: e.T173251A6980156. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173251A6980156.en. Downloaded on 15 November 2019

Egg laying location-IUCN

Altitude-EL/T

Flight months-T

Adult feeding (photo)-MR

Basking type (photo)-TK

Basking site (photo)-TK

Vanessa atalanta

Overwintering stage-T

Overwintering location-B

Overwintering location (short and tall sward)-GBB

Overwintering location (others)-B

Voltinism (bivoltine)-BK

Voltinism (others)-D

Pupal environment, HK

Forewing length-NS

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type-NS

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months-T

Flight months-GP

Adult feeding-B

Adult roosting-D

Mate locating type (territorial perching)- Argentona, I. E. S., and Secció de Ciències Naturals. "Hilltopping de les papallones diürnes al turó d'Onofre Arnau (Mataró, Maresme)."

Mate locating type (others)-D

Mate locating location (Hilltopping, bare earth)- Argentona, I. E. S., and Secció de Ciències Naturals. "Hilltopping de les papallones diürnes al turó d'Onofre Arnau (Mataró, Maresme)."

Mate locating location (others)-D

Basking type-D

Basking site-D

Vanessa cardui

Overwintering stage-D

Overwintering location (short sward)-GBB

Overwintering location (tall sward, shrub, tree)-D

Voltinism (univoltine and bivoltine)-AP

Voltinism (trivoltine)-T

Pupal location-HK

Forewing length-NS

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type-NS

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum – April to October)-T

Flight months (maximum – year round)-GP

Adult feeding-B

Adult feeding-D

Mate locating type (perching)- Argentona, I. E. S., and Secció de Ciències Naturals. "Hilltopping de les papallones diürnes al turó d'Onofre Arnau (Mataró, Maresme)."

Mate locating type (rest)-D

Mate locating location (hilltopping on bare earth and shrubs)-Argentona, I. E. S., and Secció de Ciències Naturals. "Hilltopping de les papallones diürnes al turó d'Onofre Arnau (Mataró, Maresme)."

Mate locating location (rest)-D

Basking type-Polcyn, David M., and Mark A. Chappell. "Analysis of heat transfer in Vanessa butterflies: effects of wing position and orientation to wind and light."Physiological zoology (1986): 706-716.

Basking site-D

Vanessa virginiensis

Voltinism-T

Forewing length (male min)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Hostplant age-PYR

Larval environment-PYR

Hostplant patch size-PYR

Egg laying type (photo)-PYR

Egg laying location (photo)-PYR

Altitude-T

Flight months-T

Vanessa vulcania

Overwintering stage (none)- (van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Vanessa vulcania. The IUCN Red List of Threatened Species 2010: e.T173249A6979938. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173249A6979938.en. Downloaded on 15 November 2019.)

Voltinism-T

Pupal location-IUCN

Wingspan-TK

Hostplant family-TK

Hostplant specifity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-IUCN

Egg laying type-IUCN

Egg laying location-IUCN

Egg laying aspect (partial shade)-PYR

Egg laying aspect (shade)-IUCN

Altitude-T

Flight months-T

Adult feeding (photo)-PYR

Argynnis pandora

Overwintering stage-T

Overwintering location-GBB

Voltinism-T

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-PYR

Egg laying type-LF

Egg laying location-T

Altitude (minimum)-EL

Altitude (maximum)-T

Flight months (minimum – May to July)-T

Flight months (maximum – April to October) -GP

Adult feeding (animal+ mineral)-GBF

Adult feeding (herb)-BK

Adult roosting-BK

Mate locating type-BK

Basking type (photo)-TK

Basking site-MR

Argynnis paphia

Overwintering stage (egg)-HK

Overwintering stage (larva)-T

Overwintering location-T

Pupal environment-HK

Voltinism-T

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (based on photo)-NS

Hostplant age-D

Larval environment-HK

Hostplant patch size-D

Egg laying type-HK

Egg laying location-D

Egg laying aspect-D

Altitude-GP

Flight months (minimum –July to August)-HK

Flight months (maximum – May to October) -T

Adult feeding (mineral)-GBB

Adult feeding-D

Adult roosting (off hostplant)-D

Adult roosting (rest)-BK

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Argynnis laodice

Overwintering stage-HK

Overwintering location-HK

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location-HK

Flight months-T

Adult feeding (shrub)-T

Adult feeding (mineral)-MR

Basking type (photo)-TK

Basking site (shrub, + bareground)-MR

Basking site (herbs - photo)-TK

Speyeria aglaja (Argynnis aglaja)

Overwintering stage (larvae)-T

Overwintering stage (egg)-CL

Overwintering location (buried)-GBB

Voltinism-T

Pupal location (field layer)-NS

Pupal environment (ground layer)-T

Forewing length (min)-B

Forewing length (max)-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant part-D

Hostplant age-D

Larval environment-T

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude- EL

Flight months (minimum –June to July)-HK

Flight months (maximum – May to September) -GP

Adult feeding (animal, mineral)-GBB

Adult feeding (herbs)-B

Adult roosting-D

Mate locating type-BK

Mate locating location-D

Basking type-D

Basking site-D

Argynnis auresiana

Voltinism-T

Wingspan-T

Hostplant family (only known generally for genus Viola, species unknown)- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Argynnis auresiana. The IUCN Red List of Threatened Species 2015: e.T62148732A62152248. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148732A62152248.en. Downloaded on 15 November 2019.

Egg laying location-IUCN

Altitude-T

Flight months-T

Adult feeding (photo)-TK

Basking type (photo)-TK

Fabriciana adippe (Argynnis adippe)

Overwintering stage (fully formed larvae within ovum)-T

Overwintering location-T

Voltinism-T

Pupal location-T

Forewing length (min)-AP

Forewing length (max)-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant age-D

Hostplant part (photo)-NS

Larval environment-HK

Hostplant patch size-D

Egg laying type-NS

Egg laying location (ground)-NS

Egg laying location (rest)-D

Egg laying aspect-D

Altitude (minimum)-T

Altitude (maximum)-GP

Flight months (minimum –July to August)-HK

Flight months (maximum – May to September) -GP

Adult feeding (mineral)-GBB

Adult feeding (rest)-B

Adult roosting (off hostplant)-D

Adult roosting (rest)-BK

Mate locating type-BK

Mate locating location-D

Basking type –CL

Basking site-D

Fabriciana niobe (Argynnis niobe)

Overwintering stage (fully gormed larvae within ova)-T

Overwintering location-HK

Voltinism-T

Pupal location-HK

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-T/HK

Egg laying type-HK

Egg laying location-T

Altitude-EL

Flight months (minimum – July only)-HK

Flight months (maximum – May to August) -T/EL/GP

Adult feeding-B

Mate locating type-BK

Basking type-PO

Basking site (herbs)-MR

Basking site (shrub, bare earth)-PO

Fabriciana elisa (Argynnis elisa)

Overwintering stage (fully formed larvae within ovum)-T

Overwintering location ('on violets')-LF

Voltinism-T

Pupal location-LF

Forewing length-LF

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment (prefers violets under shrubs)- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. *Argynnis elisa*. *The IUCN Red List of Threatened Species* 2015: e.T173291A64556042. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173291A64556042.en. Downloaded on 19 November 2019.

Egg laying type-LF

Altitude-EL

Flight months-T

Adult feeding (photo)-TK

Issoria lathonia

Overwintering stage-T

Overwintering location (surface)-GBB

Overwintering location (rest)-NS

Voltinism (univoltine)-AP

Voltinism (bivoltine and trivoltine)-GP

Pupal location-HK

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-HK

Egg laying type-B

Egg laying location-HK

Altitude-GP

Flight months (minimum – May to June and August to September)-HK

Flight months (maximum – February to November) -GP

Adult feeding (mineral)-https://www.butterfliesoffrance.com/html/Issoria%20lathonia.htm

Adult feeding (rest)-B

Mate locating type-PO

Basking type (photo)-TK

Basking site-MR/HK

Brenthis hecate

Overwintering stage-Bartonova, Alena, Jiri Benes, and Martin Konvicka. "Generalist-specialist continuum and life history traits of Central European butterflies (Lepidoptera)-are we missing a part of the picture?" Eur. J. Entomol 111.4 (2014): 000-000.

Overwintering location-GBB

Voltinism-T

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment-LF

Egg laying type-LF

Egg laying location (photos)-PYR

Altitude (minimum)-T

Altitude (maximum)-GP

Flight months-T

Adult feeding-GP

Mate locating type-BK

Basking type (photo)-TK

Basking site (tree)-MR

Basking site (rest - photo)-TK

Brenthis ino

Overwintering stage-T

Overwintering location-LF

Voltinism-T

Pupal location-PYR

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment (ground layer)-PYR

Larval environment (rest-photo)-B

Egg laying type-T

Egg laying location (shrubs)-T

Egg laying location (herbs)-LF

Alititude-T

Flight months-T

Adult feeding (shrub)-PO

Adult feeding (rest)-B

Adult roosting (potentially on or off hostplant)-CL

Mate location type-BK

Basking type (photo)-TK

Basking site (photo)-TK

Brenthis daphne

Overwintering stage-T

Overwintering location (in egg on rubus)-LF

Voltinism-T

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Hostplant age-CL

Larval environment (photos)-B

Egg laying type-CL

Egg laying location-CL

Altitude-GP

Flight months (minimum – June to August)-BK

Flight months (maximum – April to August) –T/EL/GP

Adult feeding -B

Mate locating type-BK

Mate locating location-CL

Basking type (photo)-CL

Basking site (photo)-CL

Boloria pales

Overwintering stage-LF

Voltinism-T

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Larval environment-LF

Egg laying type-LF

Altitude-EL

Flight months (minimum –July to August)-T

Flight months (maximum – June to September) -EL

Adult feeding (photo)-LF

Basking type (photo)-TK

Boloria napaea

Overwintering stage-T

Voltinism-T

Pupal location (photo)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-HK

Egg laying type-HK

Egg laying location-T

Adult feeding-HK

Altitude-T

Flight months-T

Basking type (photo)-TK

Basking site (photo)-TK

Boloria aquilonaris

Overwintering stage-T

Overwintering location-HK

Voltinism-T

Pupal location-HK

Forewing length (min)-AP

Forewing length (max)-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-HK

Egg laying type-HK

Egg laying location-T

Altitude-T

Flight months (minimum – June only)-HK

Flight months (maximum – June to August) –T/EL

Adult feeding-B/HK

Adult roosting (grass, exposed, communal)-MR

Adult roosting (rest)-HK

Mate locating location-HK

Basking type (photo)-TK

Basking site (photo)-TK

Boloria graeca

Overwintering stage-T

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-LF

Egg laying location-T

Altitude (minimum)-GP

Altitude (maximum)-EL

Flight months (minimum – June to August)-T/EL

Flight months (maximum – May to September) –GP

Adult feeding-GP

Basking type (photo)-GP

Basking site (rocks)-PYR

Basking site (rest)-GP

Boloria eunomia

Overwintering stage-T

Overwintering location-Radchuk, Viktoriia, Camille Turlure, and Nicolas Schtickzelle. "Each life stage matters: the importance of assessing the response to climate change over the complete life cycle in butterflies." Journal of animal ecology 82.1 (2013): 275-285.

Pupal location-HK

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment (no images but likely on herbs because of HP)-HK

Egg laying type (large and small clusters)-B

Egg laying location-T

Voltinism-T

Altitude-T

Flight months-T

Adult feeding-B

Habitat type-CRA

Basking type (photo)-TK

Basking site (photo)-TK

Boloria selene

Overwintering stage (‘larvae in most areas, pupae in scandinavia)-T

Overwintering location (surface)-GBB

Overwintering location (rest)-NS

Voltinism-T

Pupal location-NS

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-NS

Hostplant age-D

Larval environment-HK

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum – June to July)-HK

Flight months (maximum –May to September) –T/BK

Adult feeding-D

Adult roosting-D

Mate locating type-BK

Mate locating location-D

Basking type-D

Basking site-D

Boloria thore

Overwintering stage-T

Voltinism-T

Pupal location-PYR

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photo)-PYR

Larval environment (photos)-PYR

Egg laying type-PYR

Egg laying location-HK

Altitude-T

Flight months (minimum - July)-HK

Flight months (maximum –June to August)-T/EL

Adult feeding-HK

Basking site (photo)-TK

Basking type (photo)-TK

Boloria euphrosyne

Overwintering stage-T

Voltinism (univoltine and univoltine with partial 2nd generation)-T

Voltinism (univoltine and bivoltine)-BK

Pupal location-HK

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-HK

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-NS

Altitude-EL

Flight months (minimum –May to June)-HK

Flight months (maximum – April to September) –T/BK

Adult feeding-B

Adult roosting-D

Mate locating type-BK

Mate locating location-D

Basking type (photos)-GP

Basking site-D

Boloria titania

Overwintering stage ('overwintering fully formed in ova')-T

Voltinism-T

Pupal environment-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment-LF

Egg laying type-LF

Altitude-EL

Adult feeding (photos)-MR

Basking type (photo)-TK

Basking site-MR

Boloria dia

Overwintering stage-T

Overwintering location-GBB

Voltinism (univoltine, bivoltine and trivoltine!)-AP

Pupal location (photos)-CL

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Larval environment (photos)-B

Egg laying location (photos)-CL

Altitude (minimum)-EL

Altitude (maximum)-GP

Flight months (minimum –May to August)-BK

Flight months (maximum – March to September) -EL

Adult feeding-B

Adult roosting-PO

Mate locating type-BK

Mate locating location-PO

Basking type-GP

Basking site (photos)-GP

Boloria chariclea

Voltinism-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Egg laying location-T

Altitude-T

Flight months-T

Adult feeding (Bistora officionalis)-I Bolotov personal comm/Tartinov and Dulgi

Basking type (photo)-TK

Basking site (photo)-TK

Boloria freija

Overwintering stage- I Bolotov personal comm/Tartinov and Dulgin

Overwintering location- I Bolotov personal comm/Tartinov and Dulgin

Voltinism-T

Pupal location- I Bolotov personal comm/Tartinov and Dulgin

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Larval environment-HK

Egg laying type-HK

Egg laying location-T

Altitude-T

Flight months (minimum – May to June)-T/HK

Flight months (maximum –May to July) –EL

Flight months (also recorded in August)-T

Adult feeding-HK

Basking type-HK

Basking site-HK

Boloria polaris

Overwintering stage-T

Overwintering location- I Bolotov personal comm/Tartinov and Dulgin

Voltinism-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part- I Bolotov personal comm/Tartinov and Dulgin

Egg laying type- I Bolotov personal comm/Tartinov and Dulgin

Altitude (minimum)-EL

Altitude (maximum)-T

Flight months (minimum – recorded as flying for less than a month in June, July or August)-HK

Flight months (maximum – May to August) - T

Adult roosting-HK

Basking type (photo)-TK

Basking site (photo)-TK

Boloria frigga

Overwintering stage-T

Overwintering location- I Bolotov personal comm/Tartinov and Dulgin

Voltinism-T

Pupal environment- I Bolotov personal comm/Tartinov and Dulgin

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Larval environment (based on hostplant)-HK

Egg laying type-T

Egg laying location-T

Altitude-T

Flight months-T

Adult feeding-HK

Basking site-MR

Basking type-MR

Boloria improba

Overwintering stage-T

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Larval environment (based on hostplants)-HK

Egg laying location-HK

Altitude-T

Flight months (minimum -July) –HK

Flight months (maximum – June to August)-T

Adult feeding-HK

Adult roosting-HK

Mate locating location-HK

Basking site-HK

Basking type-HK

Melanargia galathea

Overwintering stage-B

Overwintering location (surface)-GBB

Overwintering location (grass)-NS

Voltinism-T

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-NS

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type (small cluster)- CL

Egg laying type (rest)-B

Egg laying location-D

Egg laying aspect-D

Altitude (widest range, also checked T and EL)-GP

Flight months-T

Adult feeding-B

Adult roosting-D

Mate location type-Dennis, Roger LH, and Tim G. Shreeve. "Does the Marbled White butterfly Melanargia galathea (L.)(Papilionoidea: Satyrinae) behave like a white'?."ANTENNA-LONDON-ROYAL ENTOMOLOGICAL SOCIETY- 28.3 (2004): 139-148.

Mate locating location-D

Basking type-GP

Basking site-D

Melanargia lachesis

Overwintering stage-CRA

Overwintering location-GBB

Voltinism-T

Pupal location (grass layer)-LF

Hostplant family- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Melanargia lachesis. The IUCN Red List of Threatened Species 2010: e.T173288A6985736. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173288A6985736.en. Downloaded on 15 November 2019.

Wingspan-LF

Forewing length-LF

Hostplant specificity-TK

Hostplant phenology-GBB

Hostplant growth (hostplant type)-GBB

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type-LF

Egg laying location-LF

Altitude-T

Flight months (min, June +July)-EL

Flight month (max, June -August)-T

Adult feeding -PYR

Basking type-PYR

Basking site-PYR

Melanargia russiae

Overwintering stage-CRA

Overwintering location (short sward)-GBB

Overwintering location (rest)-CRA

Voltinism-T

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude (min)-EL

Altitude (max)-GP

Flight months-T

Adult feeding-GP

Mate locating type-CL

Mate locating location-CL

Basking type-GP

Basking site (photo)-GP

Melanargia larissa

Overwintering location-CL

Overwintering stage-EL

Voltinism-T

Pupal location-CL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-GP

Flight months (min- May to July)-EL

Flight months (max – May to August + October)-GP

Adult feeding-GP

Basking type (photo)-TK

Basking site (photo)-TK

Melanargia occitanica

Overwintering stage (captivity)-T

Overwintering location-GBB

Voltinism-T

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type-LF

Egg laying location-LF

Altitude-T

Flight months-T

Adult feeding (photo)-TK

Basking type-PYR

Basking site-PYR

Melanargia arge

Overwintering stage-Jutzeler, D., 1994. Ökologie und erste Stände des Italienischen Schachbrettes Melanargia arge (Sulzer, 1776)(Lepidoptera: Satyridae). Nota lepidopterologica, 16(3-4), pp.213-232.

Voltinism-T

Altitude-T

Flight months-T

Altitude-EL

Habitat type-CRA

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Melanargia arge. The IUCN Red List of Threatened Species 2015: e.T173235A64819130. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173235A64819130.en. Downloaded on 15 November 2019.

Wingspan-TK

Egg laying location-Jutzeler, D., 1994. Ökologie und erste Stände des Italienischen Schachbrettes Melanargia arge (Sulzer, 1776)(Lepidoptera: Satyridae). Nota lepidopterologica, 16(3-4), pp.213-232.

Adult feeding (photos)-MR

Melanargia ines

Overwintering stage (captivity)-T

Voltinism-T

Pupal location-CRA

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment (photo)-PYR

Altitude (min)-EL

Altitude (max)-T

Flight months-T

Adult feeding (photos)-MR

Melanargia lucasi

Wingspan-TK

Hostplant family (exact species uncertain)- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N.,

Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Melanargia lucasi. The IUCN Red List of Threatened Species 2015: e.T62148704A62152801. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148704A62152801.en. Downloaded on 15 November 2019.

Altitude-T

Flight months-T

Melanargia pherusa

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Melanargia pherusa. The IUCN Red List of Threatened Species 2015: e.T173229A64819969. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173229A64819969.en. Downloaded on 15 November 2019.

Voltinism-T

Wingspan-TK

Hostplant family-IUCN

Altitude (min)-T

Altitude (max)-EL

Flight months-EL/T

Adult feeding (photos)-MR

Hipparchia syriaca

Overwintering stage-CL

Voltinism-T

Pupal location (‘in earthern cradle’)-CL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-GP

Flight months (min – June to August)-T

Flight months (max – March to October)-GP

Adult feeding (sap)-CL

Adult feeding (rest)-TK

Hipparchia fagi

Overwintering stage-B

Overwintering location (short sward)-GBB

Overwintering location (rest)-CRA

Voltinism-EL

Pupal environment-B

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Larval environment (pupal location indicates some time at ground level)-B

Egg laying type-B

Egg laying location- Möllenbeck, Verena, Gabriel Hermann, and Thomas Fartmann. "Does prescribed burning mean a threat to the rare satyrine butterfly Hipparchia fagi? Larval-habitat preferences give the answer." Journal of insect conservation 13.1 (2009): 77-87.

Altitude-GP

Flight months (min- June to September)-T

Flight months (max – May to October)-GP

Adult feeding-B

Adult roosting (canopy)-CL

Adult roosting (trunk, exposed, canopy, off hostplant)-PO

Adult roosting (rest)- Möllenbeck, Verena, Gabriel Hermann, and Thomas Fartmann. "Does prescribed burning mean a threat to the rare satyrine butterfly Hipparchia fagi? Larval-habitat preferences give the answer." Journal of insect conservation 13.1 (2009): 77-87.

Mate locating type- Pinzari, M., and V. Sbordoni. "Species and mate recognition in two sympatric Grayling butterflies: Hipparchia fagi and H. hermione genava (Lepidoptera)."Ethology Ecology & Evolution 25.1 (2013): 28-51.

Mate locating location (small herb)-PO

Mate locating location (rest)- Pinzari, M., and V. Sbordoni. "Species and mate recognition in two sympatric Grayling butterflies: Hipparchia fagi and H. hermione genava (Lepidoptera)."Ethology Ecology & Evolution 25.1 (2013): 28-51.

Basking site- Basking site- Möllenbeck, Verena, Gabriel Hermann, and Thomas Fartmann. "Does prescribed burning mean a threat to the rare satyrine butterfly Hipparchia fagi? Larval-habitat preferences give the answer." Journal of insect conservation 13.1 (2009): 77-87.

Hipparchia hermione (Hipparchia alcyone)

Overwintering stage-B

Overwintering location (short sward)-GBB

Overwintering location (rest)-CRA

Voltinism-T

Flight months-BK

Pupal location-HK/B

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment (pupal location indicates some time at ground level) -B

Egg laying type-B

Egg laying location-HK

Altitude-EL

Flight months (min- July only)-HK

Flight months (max – June to August)-T

Adult feeding (shrub)-HK

Adult feeding-B

Adult roosting (rocks, tree trunks)-CRA

Adult roosting (rest?)-HK

Mate locating type-Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Basking method-MR

Basking site-MR

Hipparchia ellena

Voltinism- T

Hostplant family-T

Hostplant specificity -T

Flight months- T

Altitude- T

Flight months- T

Hipparchia volgensis

Voltinism-T

Pupal location-CL

Wingspan-TK

Hostplant family (unspecified Poaceae)-TK

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-GP

Flight months (minimum – June to September)-T

Flight months (maximum – May to September)-EL

Adult feeding-CL

Hipparchia semele

Overwintering stage-B

Overwintering location (tall sward)-GBB

Overwintering location (tall sward)-GBB

Overwintering location (rest)-CRA

Voltinism-T

Pupal location-D

Hostplant family-T

Hostplant specificity-T

Forewing length-NS

Wingspan-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-D

Hostplant age-D

Larval environment (pupal location indicates some time at ground level) –B

Hostplant patch size –D

Egg laying type-B

Egg laying location-T

Flight months (minimum- July to August)-HK

Flight months (maximum – June to October)-EL

Adult feeding (grass/shrubs)-HK

Adult feeding (rest)-B

Adult roosting-D

Mate locating type-D

Mate locating location (edge site, hilltop)-D

Mate locating location (rest)-Pinzari, Manuela. "A comparative analysis of mating recognition signals in graylings: Hipparchia statilinus vs. H. semele (Lepidoptera: Nymphalidae, Satyrinae)." Journal of insect behavior 22.3 (2009): 227-244

Basking type-PO

Basking site-D

Hipparchia cretica

Overwintering stage-PYR

Voltinism-T

Wingspan –TK

Hostplant family (unspecified 'Poaceae'-TK

Altitude-GP

Flight months (minimum – May to August)-T

Flight months (maximum – April to October) –GP

Adult feeding (photos)-MR

Hipparchia christenseni

Voltinism –T

Wingspan-TK

Hostplant family (unspecified Poaceae) -TK

Altitude-GP

Flight months-GP/EL

Hipparchia aristaeus

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia aristaeus. The IUCN Red List of Threatened Species 2015: e.T173212A64562271. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173212A64562271.en. Downloaded on 15 November 2019.

Voltinism-T

Pupal location-LF

Forewing length-LF

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-EL

Flight months-T

Egg laying location-LF

Adult feeding-LF

Hipparchia azorina

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Larval environment (photo)-PYR

Egg laying location-T

Altitude-T

Flight months-T

Adult feeding-T

Hipparchia leighebi

Overwintering stage-Jutzeler, D., Biermann, H., Hesselbarth, G., Russo, L., Sala, G. and de Bros, E., 1997. Etudes sur la biologie, la morphologie, et l'éthologie de Hipparchia sbordonii Kudrna, 1984, de l'Isola di Ponza (Latium, Italie) et Hipparchia neapolitana du Monte Faito (Campanie, Italie) et compléments sur la biologie d'Hipparchia leighebi (Kudrna, 1976)(Lepidoptera: Nymphalidae, Satyrinae. Linneana Belgica, 16, pp.105-132.

Voltinism –EL

Wingspan-TK

Altitude-T

Flight months-T

Hostplant family ('many grasses')- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia leighebi. The IUCN Red List of Threatened Species 2015: e.T173260A64585863. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173260A64585863.en. Downloaded on 15 November 2019.

Hostplant specificity-TK

Hipparchia blachieri

Voltinism-T

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia blachieri. The IUCN Red List of Threatened Species 2015: e.T62148753A62152501. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148753A62152501.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Altitude – EL

Flight months (minimum – June to August)-T

Flight months (maximum – May to October) – EL

Hipparchia senthes

Overwintering stage-PYR

Voltinism-EL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-GP

Flight months (minimum - May to October)-EL

Flight months (maximium - April to November)-GP

Adult feeding (photo)-TK

Hipparchia azorina occidentalis (Hipparchia caldeirense)

Voltinism-T

Hostplant family-T

Hostplant specificity-T

Altitude-T

Flight months-T

Hipparchia algirica

Voltinism-TK

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Egg laying location- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia algirica. The IUCN Red List of Threatened Species 2015: e.T62148557A62152476. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148557A62152476.en. Downloaded on 15 November 2019.

Altitude-KD

Flight months-KD

Hipparchia autonoe

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Egg laying type-CL

Altitude-KD

Flight months-KD

Adult feeding (animal, photo), –TK

Adult feeding (rest)-Cho, Youngho, et al. "Conservation of Hipparchia ariautonoe (Esper)(Lepidoptera: Nymphalidae), Natural Monument in South Korea."Entomological Research 41.6 (2011): 269-274.

Hipparchia bacchus

Overwintering stage-WIEMERS, M., The butterflies of the Canary Islands A survey on their distribution, biology and ecology.

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-T

Flight months-T

Hipparchia caroli

Voltinism-TK

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia caroli. The IUCN Red List of Threatened Species 2015: e.T62148678A62152528. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148678A62152528.en. Downloaded on 15 November 2019.

Hostplant specificity-T

Egg laying location-IUCN

Altitude-T

Flight months-T

Hipparchia cypriensis

Overwintering stage-PYR

Voltinism-TK

Pupal environment (photo)-PYR

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia cypriensis. The IUCN Red List of Threatened Species 2015: e.T173279A53714381. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173279A53714381.en. Downloaded on 15 November 2019.

Larval environment (photo)-PYR

Egg laying location (photo)-PYR

Egg laying type (photo)-PYR

Altitude-KD

Flight months- John, E., and R. Parker. "Dispersal of Hipparchia cypriensis (Holik, 1949)(Lepidoptera: Nymphalidae, Satyridae) in Cyprus, with notes on its ecology and life-history." Entomologists Gazette 53.1 (2002): 3-20.

Adult feeding-KD

Adult roosting (tree trunk)--Özden, O., and David J. Hodgson. "Butterflies(Lepidoptera) highlight the ecological value of shrubland and grassland mosaics in Cypriot garrigue ecosystems." European Journal of Entomology 108.3 (2011): 431-437.

Hipparchia genava

Overwintering stage -AP

Voltinism-EL

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-EL

Flight months-EL

Mate locating type-Pinzari, M., and V. Sbordoni. "Species and mate recognition in two sympatric Grayling butterflies: Hipparchia fagi and H. hermione genava (Lepidoptera)."Ethology Ecology & Evolution 25.1 (2013): 28-51.

Mate locating location- Pinzari, M., and V. Sbordoni. "Species and mate recognition in two sympatric Grayling butterflies: Hipparchia fagi and H. hermione genava (Lepidoptera)."Ethology Ecology & Evolution 25.1 (2013): 28-51

Hipparchia gomera

Overwintering stage-WIEMERS, M., The butterflies of the Canary Islands A survey on their distribution, biology and ecology.

Overwintering stage (confirmed)-JUTZELER, D., RUSSEL, P. and VOLPE, G., 2007. Nouveaux points de vue sur la position taxonomique des cinq populations insulaires du complexe d'Hipparchia wyssii Christ (1889) se basant sur la connaissance de leurs états pré-imaginaux (Lepidoptera: Nymphalidae, Satyrinae). Linneana Belgica, 20(7), pp.9-44.

Voltinism-T

Wingspan-TK

Altitude-T

Flight months-T

Hostplant family (unspecified Poaceae) -TK

Hipparchia tamadabae

Voltinism-T

Wingspan-TK

Altitude-T

Flight months-T

Hostplant family (unspecified Poaceae) -TK

Hipparchia tilosi

Overwintering stage-JUTZELER, D., RUSSEL, P. and VOLPE, G., 2007. Nouveaux points de vue sur la position taxonomique des cinq populations insulaires du complexe d'Hipparchia wyssii Christ (1889) se basant sur la connaissance de leurs états pré-imaginaux (Lepidoptera: Nymphalidae, Satyrinae). Linneana Belgica, 20(7), pp.9-44.

Voltinism-T

Wingspan-TK

Hostplant family (unspecified Poaceae) -TK

Altitude-T

Flight months-T

Hipparchia sbordonii

Overwintering stage-Jutzeler, D., Biermann, H., Hesselbarth, G., Russo, L., Sala, G. and de Bros, E., 1997. Etudes sur la biologie, la morphologie, et l'éthologie de Hipparchia sbordonii Kudrna, 1984, de l'Isola di Ponza (Latium, Italie) et Hipparchia neapolitana du Monte Faito (Campanie, Italie) et compléments sur la biologie d'Hipparchia leighebi (Kudrna, 1976)(Lepidoptera: Nymphalidae, Satyrinae. Linneana Belgica, 16, pp.105-132.

Voltinism- EL

Wingspan –TK

Hostplant family (unspecified Poaceae)-TK

Altitude- TK

Flight months – EL

Hipparchia neopolitana

Overwintering stage-Jutzeler, D., Biermann, H., Hesselbarth, G., Russo, L., Sala, G. and de Bros, E., 1997. Etudes sur la biologie, la morphologie, et l'éthologie de Hipparchia sbordonii Kudrna, 1984, de l'Isola di Ponza (Latium, Italie) et Hipparchia neapolitana du Monte Faito (Campanie, Italie) et compléments sur la biologie d'Hipparchia leighebi (Kudrna, 1976)(Lepidoptera: Nymphalidae, Satyrinae. Linneana Belgica, 16, pp.105-132.

Voltinism- EL

Altitude—EL

Flight months – EL

Hipparchia miguelensis

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-T

Flight months-T

Adult feeding-T

Hipparchia mersina

Overwintering stage-The preimaginal stages of Hipparchia mersina (Staudinger, 1871) - biology, ecology, phenology and breeding (Lepidoptera: Nymphalidae, Satyrinae).Entomologische Zeitschrift 115, 85-90

Voltinism-T

Wingspan-TK

Altitude-GP

Hostplant family ('probably grasses')- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia mersina. The IUCN Red List of Threatened Species 2015: e.T174466A53719556. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174466A53719556.en. Downloaded on 15 November 2019.

Flight months (minimum – May to July)-T

Flight months (maximum – April to September)-GP

Adult feeding-IUCN

Adult roosting-IUCN

Basking site-IUCN

Hipparchia neomiris

Overwintering stage ('no real diapause')- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia neomiris. The IUCN Red List of Threatened Species 2015: e.T173228A64635357. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173228A64635357.en. Downloaded on 15 November 2019.

Voltinism-T

Pupal location-LF

Forewing length-LF

Wingspan-TK

Altitude -EL

Flight months-T

Hostplant family-IUCN

Egg laying type-LF

Egg laying location-LF

Adult feeding (photo)-TK

Hipparchia pellucida

Overwintering stage-CL

Voltinism-T

Pupal location-CL

Wingspan-TK

Hostplant family (unspecified Poaceae)-TK

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude (minimum)-GP

Altitude (maximum)-EL

Flight months (minimum – May to July)- T/EL

Flight months (maximum – May to September)- GP

Adult feeding-CL

Adult roosting-CL

Hipparchia powelli

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-T

Flight months-T

Hipparchia statilinus

Overwintering stage-B

Overwintering location-CRA

Voltinism-T

Pupal location-B

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment (pupal location indicates some time at ground level)-B

Altitude-GP

Egg laying type-CRA

Egg laying location-CRA

Flight months (minimum – July to August)- T

Flight months (maximum – April to November)-GP

Adult feeding (herb flower)-LF

Adult feeding (mineral)-GBF

Adult feeding (animal)-CL

Adult feeding (rest)-B

Adult roosting-CRA

Mate locating type- Pinzari, Manuela. "A comparative analysis of mating recognition signals in graylings: Hipparchia statilinus vs. H. semele (Lepidoptera: Nymphalidae, Satyrinae)." Journal of insect behavior 22.3 (2009): 227-244.

Mate locating location (hilltopping)-CL

Mate locating location (rest)- Pinzari, Manuela. "A comparative analysis of mating recognition signals in graylings: Hipparchia statilinus vs. H. semele (Lepidoptera: Nymphalidae, Satyrinae)." Journal of insect behavior 22.3 (2009): 227-244.

Basking method-MR

Basking site-MR

Hipparchia fatua

Overwintering stage-T

Voltinism-T

Pupal location (photos)-PYR

Wingspan-TK

Hostplant family-TK

Larval environment (photo)-PYR

Altitude-EL

Flight months (minimum – May to October)-T/EL

Flight months (maximum –April to October)- GP

Hipparchia hansii

Voltinism-T

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Hipparchia hansii. The IUCN Red List of Threatened Species 2015: e.T160692A847639. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T160692A847639.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Egg laying location-IUCN

Altitude-T

Flight months-T

Hipparchia wyssii

Overwintering stage-PYR

Voltinism-T

Wingspan-TK

Hostplant family (unspecified Poaceae) -TK

Larval environment-PYR

Altitude-T

Flight months-T

Hipparchia fidia

Overwintering stage-CRA

Overwintering location (short and tall sward) -GBB

Overwintering location (surface)-GBF

Voltinism-T

Pupal environment (photo)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment-PYR (photo)

Egg laying type- Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Egg laying location- Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Egg laying aspect- Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Altitude-T

Flight months-T

Adult feeding (herb photo)-PYR

Adult feeding (animal, mineral)-GBF

Mate locating type-Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Basking method-MR

Basking site-MR

Chazara briseis

Overwintering stage-B

Overwintering location-CL

Voltinism-T

Pupal location-B

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Larval environment (pupal location suggests some time at groundlayer)-B

Egg laying type (single)- Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Egg laying type (small batch)-B

Egg laying location (short herbs – 'withered grass')-CRA

Egg laying location (bare ground)- Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Altitude-T

Flight months (minimum – July to September)-BK

Flight months (maximum – May to October)-T/GP

Adult feeding (decaying plants)-CL

Adult feeding (animal, mineral)-GBF

Adult feeding (rest)-B

Mate locating type-Garcia-Barros, E. "Comparative data on the adult biology, ecology and behaviour of species belonging to the genera Hipparchia, Chazara and Kanetisa in central Spain (Nymphalidae: Satyrinae)." Nota lepidopterologica23.2 (2000): 119-140.

Mate locating location-PO

Basking type-PO

Basking site-PO

Chazara prieuri

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Chazara prieuri. The IUCN Red List of Threatened Species 2015: e.T174415A53710653. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174415A53710653.en. Downloaded on 15 November 2019.

Voltinism-T

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Altitude-T

Flight months-T

Adult feeding-PYR

Pseudochazara atlantis

Voltinism-T

Wingspan-TK

Hostplant family ('uncertain grass species')- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Pseudochazara atlantis. The IUCN Red List of Threatened Species 2015: e.T62148609A62153032. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148609A62153032.en. Downloaded on 15 November 2019.

Altitude-T

Flight months-T

Pseudochazara graeca

Overwintering stage-PYR

Voltinism-T

Wingspan-TK

Hostplant family ('various grasses')- IUCN

Egg laying type (photo)-PYR

Altitude-GP

Flight months (minimum – July to August)-T/EL

Flight months (maximum – June to September)-GP

Adult feeding-GP

Basking type-GP

Basking site- GP

Pseudochazara mercurius (Pseudochazara mercurius)

Overwintering stage (lab)-T

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Altitude-T

Flight months-T

Adult feeding-GBF

Pseudochazara amymone

Overwintering stage-Gascoigne-Pees, M., Verovnik, R., Franeta, F. and Popović, M., 2014. The lifecycle and ecology of Pseudochazara amymone (Brown, 1976),(Lepidoptera: Nymphalidae, Satyrinae). Nachrichten des Entomologischer Verain Apollo, 35(3), pp.129-138.

Voltinism-EL

Wingspan-TK

Altitude-EL

Flight months (minimum – July to August)-EL

Flight months (maximum – June to August)-GP

Basking type-GP

Basking site-GP

Pseudochazara mamurra

Overwintering stage-CL

Voltinism-T

Pupal location-CL

Wingspan-TK

Hostplant family (unspecified Poaceae)-TK

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Flight months-T

Mate locating type-CL

Pseudochazara geyeri

Overwintering stage-Hesselbarth, G., Van Oorschot, H. and Wagener, S., 1995. Die Tagfalter der Türkei: unter Berücksichtigung der angrenzenden Länder. Bd. 2. Spezieller Teil: Nymphalidae. Fundortverzeichnis, Sammlerverzeichnis, Literaturverzeichnis, Indices. Wagener.

Voltinism-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-GP

Flight months-T

Adult feeding-GP

Pseudochazara cingovskii

Overwintering stage-Aussem, B. and Hesselbarth, G., 1980. Die Praeimaginalstadien von Pseudochazara cingovskii (Gross, 1973)(Satyridae). Nota lepid, 3, pp.17-23

Voltinism-T

Wingspan-TK

Hostplant family- Verovnik, R. Micevski, B. Maes, D. Wynhoff, I. Van Swaay, C. and Warren M. (2013), 'Conserving Europe's Most Endangered Butterfly: the Macedonian Grayling (Pseudochazara cingovskii' Journal of Insect Conservation 17;5 941-947

Egg laying location-Verovnik, R. Micevski, B. Maes, D. Wynhoff, I. Van Swaay, C. and Warren M. (2013), 'Conserving Europe's Most Endangered Butterfly: the Macedonian Grayling (Pseudochazara cingovskii' Journal of Insect Conservation 17;5 941-947

Altitude-T

Flight months-T

Pseudochazara orestes

Overwintering stage (none in south England but far from natural range)-T

Voltinism-T

Wingspan-TK

Hostplant family (unspecified Poaceae) –TK

Egg laying location-T

Egg laying aspect-T

Altitude-GP

Flight months (minimum – June to July)-T/EL

Flight months (maximum –June to September)-GP

Adult feeding-GP

Pseudochazara mniizechii

Voltinism-T

Pupal location-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Egg laying type-CL

Egg laying location-CL

Altitude-T

Flight months-T

Adult feeding-Martin, et al. "The lifecycle and ecology of Pseudochazara amymone (Brown, 1976),(Lepidoptera: Nymphalidae, Satyrinae)." Nachrichten des Entomologischer Verain Apollo 35.3 (2014): 129-138.

Mate locating type-CL

Pseudochazara anthelea

Voltinism-T

Pupal location (photo)-PYR

Wingspan-TK

Hostplant family (unspecified Poaceae)-TK

Larval environment-PYR

Altitude-GP

Flight months (minimum – May to July)-T/EL

Flight months (maximum – May to September)-GP

Adult feeding-CRA

Adult roosting-CRA

Mate locating type-CRA

Mate locating location-CRA

Oeneis glacialis

Overwintering stage-T

Voltinism-T

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Forewing length-AP

Wingspan-TK

Egg laying type-CRA

Egg laying location (on grasses)-LF

Egg laying location (rest)-CRA

Altitude-T

Flight months-T

Adult feeding (photos)-MR

Adult roosting-CRA

Mate locating type-CRA

Mate locating location-CRA

Oeneis norna

Overwintering stage-T

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Larval environment type (based on Hostplant)-HK

Altitude-EL

Flight months-T

Egg laying type-HK

Egg laying location-CRA

Adult roosting-CRA

Oeneis bore

Overwintering stage-T

Voltinism-T

Pupal location-HK

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Larval environment (based on hostplant)-HK

Egg laying location-HK

Adult roosting-HK

Altitude-T

Flight months (minimum – June only)-HK

Flight months (maximum – June to July)-T/EL/HK

Oeneis jutta

Overwintering stage-CRA

Voltinism (biennial)-CRA

Voltinism (univoltine)-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant part-http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/jutta-arctic/?id=1370403265661

Larval environment-HK

Egg laying location-CRA

Flight months (minimum – June to July)-T/HK

Flight months (maximum – May to July)-EL/HK

Adult feeding-http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/jutta-arctic/?id=1370403265661

Adult roosting (bare ground)-HK

Adult roosting (rest)-CRA

Basking type-MR

Basking site-MR

Satyrus actaea

Overwintering stage-CRA

Overwintering location (tall sward, shrub)-GBB

Overwintering location (rest)-CRA

Voltinism-T

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Satyrus actaea. The IUCN Red List of Threatened Species 2010: e.T173282A6984946. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173282A6984946.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Hostplant phenology-GBB

Hostplant growth (hostplant type)-GBB

Hostplant part-GBB

Larval environment (photos)-PYR

Altitude-T

Flight months-T

Egg laying type-LF

Egg laying location (photos)-PYR

Adult feeding (photo)-TK

Basking type-PYR

Basking type (lateral)-MR

Basking site-PYR

Satyrus ferula

Overwintering stage-CRA

Overwintering location-GBB

Voltinism-T

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Egg laying location-LF

Altitude-GP

Flight months (minimum – June to August)-T/EL

Flight months (maximum – June to September)-T

Adult feeding (mineral + animal)-PO

Adult feeding-CRA

Larval environment (photos)-PYR

Egg laying location (photos)-PYR

Egg laying type (photo)-PYR

Mate locating type-LF

Mate locating location-PO

Basking type-GP

Basking site (low herb)-PO

Basking site (rest)-GP

Minois dryas

Overwintering stage-B

Overwintering location-GBB

Voltinism-T

Pupal location-B

Forewing length-B

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-GBB

Hostplant growth (Hostplant type)-GBB

Hostplant part-GBB

Larval environment (placement of eggs and pupa indicates some time spent at groundlayer)–B

Egg laying type-B

Egg laying location ('dropped into grass' so somewhere between ground and short sward most likely)-CRA

Altitude-EL

Flight months (minimum –July to August)-EL

Flight months (maximum- June to September)-T/GP

Adult feeding (animal)-CL

Adult feeding (rest)-B

Mate locating type-CL

Mate locating location,-CL

Adult roosting-PO

Basking type-GP

Basking site-GP

Brintesia circe

Overwintering stage-B

Overwintering location-GBB

Voltinism-T

Pupal location-B

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment (egg location + pupa suggest some time at groundlayer)-B

Egg laying type-B

Egg laying location-T

Altitude-GP

Flight months (minimum –July to September)-BK

Flight months (maximum – May to October)-GP

Adult feeding (sap, decaying fruit)-CL

Adult feeding (animal, mineral)-GBF

Adult feeding (rest)-B

Adult roosting (trunk)-LF

Adult roosting (rest)-PO

Mate locating type (territorial perching/patrolling)-CL

Mate locating location-CL

Basking type (lateral)-MR

Basking type (rest)-PO

Basking site (trunk)-PO

Basking site (rest)-LF

Berberia abdelkader

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-T

Flight months-T

Adult feeding-T

Berberia lambessanus

Voltnims--T

Wingspan-TK

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location-T

Egg laying aspect-T

Altitude-T

Flight months-T

Adult feeding (photos)-MR

Arethusana arethusa

Overwintering stage-B

Overwintering location-GBB

Voltinism-T

Forewing length-B

Wingspan-TK

Pupal location (within grass tussock)-CRA

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology- -GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Larval environment-B

Egg laying location ('dropped into grass' so somewhere between ground and short sward most likely)-CRA

Egg laying aspect-B

Altitude (minimum)-T

Altitude (maximum)-GP

Flight months (minimum – July to September)-EL/BK

Flight months (maximum – May to September)-GP

Adult feeding-B

Mate locating type-PO

Mate locating location-PO

Basking type (lateral)-PO

Basking type (others)-GP

Basking site-PO

Erebia ligea

Overwintering stage-T

Voltinism-T

Pupal location-B

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-AP

Larval environment (pupal location shows some time at groundlayer)–B

Egg laying type-B

Egg laying location-B

Altitude (minimum)-T

Altitude (maximum)-GP

Flight months (minimum – July to August)-T/EL/HK

Flight months (maximum –May to August)-GP

Adult feeding (mineral)-PO

Adult feeding-B

Basking type-HK

Adult roosting-HK

Mate locating type-PO

Mate locating location-PO

Basking type-PO

Basking site (shrub)-PO

Basking site (rest)-HK

Erebia euryale

Overwintering stage-AP

Overwintering location-GBB

Voltinism (biennial)-AP

Voltinism (univoltine)-T/EL/BK/GP

Pupal location (photo)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificy-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment (photos)-PYR

Egg laying type- Kuras, Tomas, Jiri Benes, and Martin Konvicka. "Behaviour and within-habitat distribution of adult Erebia sudetica sudetica, endemic of the Hruby Jesenik Mts., Czech Republic (Nymphalidae, Satyrinae)." Nota lepidopterologica 24.4 (2001): no-4.

Egg laying location (photo – on grass)- PYR

Altitude-GP

Flight months (minimum – July to August)-T/EL/GP

Flight months (maximum – June to September)-BK

Adult feeding-GP

Adult roosting-Kleckova, Irena, Martin Konvicka, and Jan Klecka. "Thermoregulation and microhabitat use in mountain butterflies of the genus Erebia: importance of fine-scale habitat heterogeneity." Journal of thermal biology 41 (2014): 50-58.

Mate locating type- Kuras, Tomas, Jiri Benes, and Martin Konvicka. "Behaviour and within-habitat distribution of adult Erebia sudetica sudetica, endemic of the Hruby Jesenik Mts., Czech Republic (Nymphalidae, Satyrinae)." Nota lepidopterologica 24.4 (2001): no-4.

Basking site (photo)-TK

Basking site (photo)-TK

Erebia eriphyle

Overwintering stage-T

Voltinism-T

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval location (photo)-PYR

Altitude-T

Flight months-T

Adult feeding (photos)-MR

Basking type (photo)-TK

Erebia manto

Overwintering stage (ova possibly only in captivity) -T

Overwintering location (straight away after emerging from egg)-PYR

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-B

Altitude-T

Flight months-T

Egg laying type-CRA

Egg laying location (tall herbs)-PYR

Egg laying location (rest)- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia manto. The IUCN Red List of Threatened Species 2010: e.T173275A6983685. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173275A6983685.en. Downloaded on 15 November 2019.

Adult feeding-B

Erebia flavofasciata

Overwintering stage-T

Voltinism-T

Forewing length –AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia flavofasciata. The IUCN Red List of Threatened Species 2010: e.T173259A6981381. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173259A6981381.en. Downloaded on 15 November 2019.

Egg laying location (eggs are laid on ground but female positions herself on short turf so I've included this resource as well)-IUCN

Altitude-T

Flight months-T

Adult feeding (photos)-MR

Erebia epiphron

Overwintering stage-T

Overwintering location-NS

Voltinism-T

Pupal location-D

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-NS

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type-B

Egg laying location-NS

Egg laying aspect-NS

Altitude-EL

Flight months (minimum – July to August)-BK

Flight months (maximum – June to August)-T/EL

Adult feeding–B

Adult roosting-D

Mate locating type-D

Mate locating site-D

Basking type-NS

Basking site-D

Erebia claudina

Overwintering stage-T

Voltinism-T

Pupal location (photo)- Jutzeler, D., et al. "Breeding experiments with Erebia claudina (Borkhausen, 1779) from the Radstaedter Tauern (Salzburg, Austria)(Lepidoptera: Nymphalidae, Satyrinae)." Linneana Belgica (Belgium) (1999).

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment,-Jutzeler, D., et al. "Breeding experiments with Erebia claudina (Borkhausen, 1779) from the Radstaedter Tauern (Salzburg, Austria)(Lepidoptera: Nymphalidae, Satyrinae)." Linneana Belgica (Belgium) (1999).

Altitude (minimum)-T

Altitude (maximum)-EL

Flight months-EL

Adult feeding-MR

Basking type (photo)-TK

Erebia orientalis

Overwintering stage-PYR

Voltinism-T

Wingspan-TK

Altitude-T

Flight months-T

Hostplant family (unspecified Poaceae)-TK

Hostplant specificity-TK

Basking type (photo-TK

Basking site (photo)-TK

Erebia christi

Overwintering stage-T

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia christi. The IUCN Red List of Threatened Species 2010: e.T39491A10232607. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T39491A10232607.en. Downloaded on 15 November 2019.

Egg laying location-IUCN

Altitude-T

Flight months (minimum – July to August)-EL

Flight months (maximum – June to August)-T

Adult feeding (muddpuddling)-IUCN

Adult feeding (photos- rest)-MR

Basking type-IUCN

Erebia melampus

Overwintering stage-CRA

Voltinism-T

Wingspan-TK

Forewing length –AP

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-T

Flight months-T

Adult feeding (photos)-MR

Adult roosting -Kleckova, Irena, Martin Konvicka, and Jan Klecka. "Thermoregulation and microhabitat use in mountain butterflies of the genus Erebia: importance of fine-scale habitat heterogeneity." Journal of thermal biology 41 (2014): 50-58.

Basking type (photo)-TK

Erebia pharte

Overwintering stage-T

Voltinism-T

Pupal location- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia pharte. The IUCN Red List of Threatened Species 2010: e.T173283A6985061. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173283A6985061.en. Downloaded on 15 November 2019.

Forewing length –AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-T

Flight months-T

Adult feeding-LF

Basking type (photo)-TK

Erebia sudetica

Overwintering stage-AP

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude (minimum)-T

Altitude (maximum)-EL

Flight months (minimum – July to August)-T/EL

Flight months (maximum – July to September)-BK

Adult feeding-LF

Adult roosting- Kuras, Tomas, Jiri Benes, and Martin Konvicka. "Behaviour and within-habitat distribution of adult Erebia sudetica sudetica, endemic of the Hruby Jesenik Mts., Czech Republic (Nymphalidae, Satyrinae)." Nota lepidopterologica 24.4 (2001): no-4.

Mate locating type- Kuras, Tomas, Jiri Benes, and Martin Konvicka. "Behaviour and within-habitat distribution of adult Erebia sudetica sudetica, endemic of the Hruby Jesenik Mts., Czech Republic (Nymphalidae, Satyrinae)." Nota lepidopterologica 24.4 (2001): no-4.

Basking site- Kuras, Tomas, Jiri Benes, and Martin Konvicka. "Behaviour and within-habitat distribution of adult Erebia sudetica sudetica, endemic of the Hruby Jesenik Mts., Czech Republic (Nymphalidae, Satyrinae)." Nota lepidopterologica 24.4 (2001): no-4.

Erebia aethiops

Overwintering stage (in leaf litter)-NS

Overwintering stage (rest)-CRA

Voltinism-T

Pupal environment-B

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-NS

Hostplant age-D

Larval environment (pupal location shows some time at groundlayer) –B

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum – July to September)-T/EL/BK

Flight months (maximum – June to September)-GP

Adult feeding-B

Adult roosting (grasses +on/off hostplant)-D

Adult roosting (rest) -Slamova, Irena, Jan Klecka, and Martin Konvicka. "Diurnal behavior and habitat preferences of Erebia aethiops, an aberrant lowland species of a mountain butterfly clade." Journal of insect behavior 24.3 (2011): 230-246.

Mate locating type-D

Mate locating location-D

Basking type-NS

Basking site-D

Erebia triarius

Overwintering stage-AP

Overwintering location-GBB

Voltinism-T

Pupal location (photo)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment (photos)-PYR

Altitude-T

Flight months-T

Adult feeding (mineral)-https://www.butterfliesoffrance.com/html/Erebia%20triaria.htm

Adult feeding (photos rest)-MR

Basking type (photo)-TK

Basking site (photo)-TK

Erebia embla

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-HK

Altitude-T

Flight months-T

Adult roosting-HK

Erebia disa

Overwintering stage-T

Voltinism-T

Pupal location-HK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-T

Flight months-T

Adult roosting-HK

Erebia medusa

Overwintering stage-T

Overwintering location-CL

Voltinsm-T

Pupal location-V

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant part (photo)-PYR

Larval environment (pupal location shows some time at groundlayer) –B

Egg laying type-B

Egg laying location-Stuhldreher, Gregor, and T. H. O. M. A. S. FArTMANN. "Oviposition-site preferences of a declining butterfly Erebia medusa (Lepidoptera: Satyrinae) in nutrient-poor grasslands." Eur. J. Entomol 112.3 (2015): 493-499.

Altitude-EL

Flight months (minimum – May to July)-BK

Flight months (maximum –May to August)-T/EL/GP

Adult feeding-B

Mate locating type-BK

Basking type (photo)-TK

Basking site (photo)-TK

Erebia polaris

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia polaris. The IUCN Red List of Threatened Species 2010: e.T174378A7061043. Downloaded on 15 November 2019.

Voltinism (minimum)-IUCN

Voltinism (rest)-T

Pupal location-HK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Larval environment-HK

Egg laying type-HK

Egg laying location-HK

Altitude-T

Flight months (minimum – July only)-HK

Flight months (maximum – June to July)-T/EL/HK

Basking type (photo)-MR

Basking site (photo)-MR

Erebia alberganus

Overwintering stage-CRA

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-T

Flight months-T

Adult feeding (mineral)- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia alberganus. The IUCN Red List of Threatened Species 2010: e.T173278A6984115. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173278A6984115.en. Downloaded on 15 November 2019.

Adult feeding (rest)-PO

Adult roosting-Kleckova, Irena, Martin Konvicka, and Jan Klecka. "Thermoregulation and microhabitat use in mountain butterflies of the genus Erebia: importance of fine-scale habitat heterogeneity." Journal of thermal biology 41 (2014): 50-58.

Mate locating type-PO

Mate locating location-PO

Basking type (lateral)-PO

Basking type (photo rest)-LF

Basking site-PO

Erebia pluto

Overwintering stage-T

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-T

Egg laying type-LF

Egg laying location-T

Altitude-EL

Flight months (minimum – July to August)-T

Flight months (maximum – June to August)-EL

Basking type-T

Basking site-T

Erebia gorge

Overwintering stage-AP

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia gorge. The IUCN Red List of Threatened Species 2010: e.T161189A5391162. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T161189A5391162.en. Downloaded on 15 November 2019.

Altitude-EL

Flight months-T

Basking type (photo)-TK

Basking site-CRA

Erebia aethiopella

Overwintering stage-T

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Altitude-EL/T

Flight months-T

Egg laying location- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia aethiopella. The IUCN Red List of Threatened Species 2010: e.T160493A5369920. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T160493A5369920.en. Downloaded on 15 November 2019.

Erebia rondoui

Overwintering stage-PYR

Overwintering location-GBB

Voltinism-EL

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Basking type (photo)-PYR

Basking site (photo)-PYR

Erebia rhodopensis

Overwintering stage-PYR

Voltinism-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude (minimum)-GP

Altitude (maximum)-T

Flight months (minimum – July only)-GP

Flight months (maximum – July to August)-T/EL

Adult feeding (photo)-TK

Basking type (photo)-TK

Basking site (photo)-TK

Erebia mnestra

Overwintering stage-T

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia mnestra. The IUCN Red List of Threatened Species 2010: e.T173203A6973485. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173203A6973485.en. Downloaded on 15 November 2019.

Egg laying location-CRA

Altitude-T

Flight months-T

Adult feeding-LF

Basking type-LF

Basking site (photo – bare ground)-TK

Basking site (photo – tall herbs)-LF

Erebia gorgone

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia gorgone. The IUCN Red List of Threatened Species 2010: e.T7980A12879096. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T7980A12879096.en. Downloaded on 15 November 2019.

Voltinism-T

Forewing length-LF

Wingspan-TK

Hostplant family-IUCN

Hostplant specificity-IUCN

Altitude-T

Flight months-T

Adult feeding-LF

Basking type (photo)-TK

Erebia epistygne

Overwintering stage-AP

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Altitude (minimum)-EL

Altitude (maximum)-T

Flight months-T

Adult feeding (photos)-MR

Basking type-LF

Basking site-LF

Erebia tyndarus

Overwintering stage-CRA

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Altitude-T

Flight months-T

Adult feeding-LF

Basking method (photo)-TK

Basking site (photo)-TK

Erebia cassoides

Overwintering stage-CRA

Overwintering location-GBB

Voltinism-T

Pupal location (photos)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type (photo)-PYR

Egg laying location-CRA

Altitude (minimum)-GP

Altitude (maximum)-T

Flight months (minimum – July to August)-GP

Flight months (maximum – June to September)-T/EL

Adult feeding (mineral)-GBF

Adult feeding (photo rest)-PYR

Adult roosting-Kleckova, Irena, Martin Konvicka, and Jan Klecka. "Thermoregulation and microhabitat use in mountain butterflies of the genus Erebia: importance of fine-scale habitat heterogeneity." Journal of thermal biology 41 (2014): 50-58.

Basking type (photo)-PYR

Basking site (photo)-PYR

Erebia hispania

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Erebia hispania. The IUCN Red List of Threatened Species 2015: e.T173294A64559880. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173294A64559880.en. Downloaded on 15 November 2019.

Voltinism-T

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Altitude (minimum)-T

Altitude (maximum)-EL

Flight months-T

Adult feeding (photos)-MR

Adult feeding (mineral)-GBF

Basking type-LF

Basking site-LF

Erebia nivalis

Overwintering stage-T

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type (photo)-MR

Egg laying location (photo)-MR

Altitude-T

Flight months (minimum – July only)-EL

Flight months (maximum – July to August)-T

Adult feeding (photos)-MR

Erebia ottomana

Overwintering stage-AP

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-GP

Flight months (minimum – July to August)-T/EL

Flight months (maximum – May to September)-GP

Adult feeding-LF

Basking type (photo)-LF

Basking site-LF

Erebia calcarius

Overwintering stage-AP

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location-IUCN

Altitude-EL

Flight months-T

Adult feeding (photos)-MR

Basking type (photo)-TK

Erebia pronoe

Overwintering stage-AP

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location-CRA

Altitude-T

Flight months-T

Adult feeding (photo)-TK

Basking type-LF

Basking site (photos)-TK

Erebia melas

Overwintering stage-AP

Voltinism-T

Hostplant family- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia melas. The IUCN Red List of Threatened Species 2010: e.T173314A6989170. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173314A6989170.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Forewing length-AP

Wingspan-TK

Altitude-T

Flight months (minimum – July to September)-T/EL

Flight months (maximum – June to September)-GP

Adult feeding (photo)-TK

Basking method-IUCN

Erebia lefebvrei

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia lefebvrei. The IUCN Red List of Threatened Species 2010: e.T173250A6980048. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173250A6980048.en. Downloaded on 15 November 2019.

Voltinism-T

Forewing length-LF

Wingspan-TK

Hostplant family-IUCN

Hostplant specificity-IUCN

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Egg laying type-LF

Altitude-EL

Flight months-T

Basking type-LF

Basking site-LF

Erebia scipio

Overwintering stage-AP

Overwintering stage–AP

Voltinism (biennial)-AP

Voltinism (univoltine)-T/EL

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-EL

Flight months-T

Adult feeding-LF

Basking type-LF

Basking site-LF

Erebia stiria

Overwintering stage-AP

Voltinism-T

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-T

Flight months-T

Adult feeding (photo)-TK

Erebia styx

Overwintering stage-AP

Voltinism-T

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Forewing length-AP

Wingspan-TK

Altitude-EL

Flight months-T

Adult feeding (photos)-MR

Erebia montana

Overwintering stage-AP

Voltinism-T

Forewing length –AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-LF

Altitude-T

Flight months-T

Adult feeding (photo)-TK

Adult roosting- Kleckova, Irena, Martin Konvicka, and Jan Klecka. "Thermoregulation and microhabitat use in mountain butterflies of the genus Erebia: importance of fine-scale habitat heterogeneity." Journal of thermal biology 41 (2014): 50-58.

Basking site-LF

Basking type-LF

Erebia zapateri

Overwintering stage-T

Voltinism-T

Wingspan-TK

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplant family-T

Hostplant specificity ('Poaceae')-T

Hostplant phenology-GBB

Hostplant growth (hostplant type) -GBB

Hostplant part-GBB

Altitude (minimum)-EL

Altitude (maximum)-T

Flight months (minimum – July to September)-T

Flight months (maximum – June to September)-EL

Adult feeding- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Erebia zapateri. The IUCN Red List of Threatened Species 2015: e.T173265A64560417. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173265A64560417.en. Downloaded on 15 November 2019.

Erebia neoridas

Overwintering stage-AP

Overwintering location-GBB

Voltinsim-T

Pupal location (photo)-PYR

Forewing length –AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (hostplant type) –FE

Hostplant part-GBB

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-T

Flight months (minimum – August to September)-EL

Flight months (maximum – August to October)-T

Adult feeding-LF

Basking type-LF

Basking site-LF

Erebia oeme

Overwintering stage-T

Voltinism-T

Pupal location (photo)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment (photos)-PYR

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-T

Adult feeding- Dincã, Vlad, et al. "Biogeography, ecology and conservation of Erebia oeme (Hübner) in the Carpathians (Lepidoptera: Nymphalidae: Satyrinae)." Annales de la Societe Entomologique de France. Vol. 46. No. 3. 2010.

Mate locating type-PO

Mate locating location-PO

Basking type-LF

Basking site-LF

Erebia meolans

Overwintering stage-B

Overwintering location (short sward+tall sward)-GBB

Overwintering location (rest)-CRA

Voltinism-T

Pupal location-B

Forewing length (min)-AP

Forewing length (max)-B

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment (pupal location shows some time at groundlayer)-B

Egg laying type (photo)-PYR

Egg laying location-PYR

Altitude-EL

Flight months-T

Adult feeding-B

Hostplant part-GBB

Basking type-LF

Basking site (photos - herbs)-TK

Basking site (photos -bareground)-LF

Erebia palarica

Voltinism-T

Forewing length (male min)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia palarica. The IUCN Red List of Threatened Species 2010: e.T161145A5390204. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T161145A5390204.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-PYR

Larval environment-PYR

Egg laying type (photo-PYR

Egg laying location (photo)-PYR

Altitude (minimum)-EL

Altitude (maximum)-T

Flight months-T

Adult feeding (photo)-TK

Basking type-PYR

Basking site-PYR

Erebia pandrose

Overwintering stage-CRA

Overwintering location-GBB

Voltinism-T

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type-LF

Egg laying location ('low down')-LF

Egg laying location (rest)-CRA

Altitude-EL

Flight months-T

Adult feeding (also feeds on moss/lichen)-HK

Adult roosting (grasses)-https://www.butterfliesoffrance.com/html/Erebia%20pandrose.htm

Adult roosting (rest)- Kleckova, Irena, Martin Konvicka, and Jan Klecka. "Thermoregulation and microhabitat use in mountain butterflies of the genus Erebia: importance of fine-scale habitat heterogeneity." Journal of thermal biology 41 (2014): 50-58.

Basking type-LF

Basking site-LF

Erebia sthennyo

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Erebia sthennyo. The IUCN Red List of Threatened Species 2010: e.T7984A12879866. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T7984A12879866.en. Downloaded on 15 November 2019.

Voltinism-T

Forewing length (male min and average)-GBB

Forewing length (rest)-LF

Wingspan-TK

Hostplant family-IUCN

Hostplant specificity-IUCN

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Altitude-EL

Flight months-EL

Basking type-LF

Basking site-LF

Proterebia phegea (Proterebia afra)

Overwintering stage-CL

Voltinism-T

Pupal location-CL

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-EL

Flight months (minimum –April to May)-T

Flight months (maximum – April to June)-EL

Flight months (March to May)-GP

Adult feeding-T

Mate locating type (uncertain, males actively patrol and move towards hilltops, but also territorial)-CL

Mate locating location-CL

Basking type-CL

Basking location-CL

Maniola jurtina

Overwintering stage-B

Overwintering location (tall sward)-GBB

Overwintering location (rest)-CRA

Voltinism-T

Pupal location-CRA

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment (groundlayer)- Andrea Grill (personal comunication)

Larval environment (rest)-B

Hostplant patch size-D

Egg laying type-HK

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum – June to July)-T

Flight months (maximum – March to October)-GP

Adult feeding –B

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-PO

Basking site-D

Maniola megala

Overwintering stage- Andrea Grill (personal comunication)

Voltinism-T

Pupal location ('on ground or grass blade'- Andrea Grill (personal comunication)

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Maniola megala. The IUCN Red List of Threatened Species 2015: e.T174397A53719703. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174397A53719703.en. Downloaded on 15 November 2019.

Hostplant specificity- IUCN

Hostplant part- Andrea Grill (personal comunication)

Hostplant age- Andrea Grill (personal comunication)

Larval environment- Andrea Grill (personal comunication)

Egg laying type- Andrea Grill (personal comunication)

Egg laying location- Andrea Grill (personal comunication)

Altitude (minimum)-GP

Altitude (maximum)-EL

Flight months (minimum – May to June)-EL

Flight months (maximum - May to September)-EL

Adult feeding (cistus)- Andrea Grill (personal comunication)

Adult feeding (rest)-IUCN

Adult roosting (exposed)-IUCN

Adult roosting (rest)- Andrea Grill (personal comunication)

Mate locating type- Andrea Grill (personal comunication)

Mate locating location- Andrea Grill (personal comunication)

Basking type- Andrea Grill (personal comunication)

Basking site- Andrea Grill (personal comunication)

Maniola nurag

Overwintering stage (larval)- Andrea Grill (personal comunication)

Voltinism-T

Pupal location ('on ground or grass blade'- Andrea Grill (personal comunication)

Wingspan-TK

Hostplant family- Grill, Andrea, et al. "Ecological differentiation between the Sardinian endemic Maniola nurag and the pan-European M. jurtina." Biological Journal of the Linnean Society 89.4 (2006): 561-574.

Hostplant part- Andrea Grill (personal comunication)

Hostplant age- Andrea Grill (personal comunication)

Larval environment- Andrea Grill (personal comunication)

Egg laying type- Andrea Grill (personal comunication)

Egg laying location- Andrea Grill (personal comunication)

Altitude-EL

Flight months (April to June)- Grill, Andrea, et al. "Ecological differentiation between the Sardinian endemic Maniola nurag and the pan-European M. jurtina." Biological Journal of the Linnean Society 89.4 (2006): 561-574.

Flight months (rest)-T

Adult feeding - Grill, Andrea, et al. "Ecological differentiation between the Sardinian endemic Maniola nurag and the pan-European M. jurtina." Biological Journal of the Linnean Society 89.4 (2006): 561-574

Adult roosting (rest)- Andrea Grill (personal comunication)

Mate locating type- Grill, Andrea, et al. "Ecological differentiation between the Sardinian endemic Maniola nurag and the pan-European M. jurtina." Biological Journal of the Linnean Society 89.4 (2006): 561-574.

Mate locating location- Andrea Grill (personal comunication)

Basking type- Andrea Grill (personal comunication)

Basking site- Andrea Grill (personal communication)

Maniola chia

Overwintering stage- Andrea Grill (personal comunication)

Voltinism-T

Pupal location ('on ground or grass blade'- Andrea Grill (personal comunication)

Wingspan-TK

Hostplant family ('Poaceae)-TK

Hostplant part- Andrea Grill (personal comunication)

Hostplant age- Andrea Grill (personal comunication)

Larval environment- Andrea Grill (personal comunication)

Egg laying type- Andrea Grill (personal comunication)

Egg laying location- Andrea Grill (personal comunication)

Altitude-EL

Flight months-T

Adult feeding (cistus)- Andrea Grill (personal comunication)

Adult roosting (rest)- Andrea Grill (personal comunication)

Mate locating type- Andrea Grill (personal comunication)

Mate locating location- Andrea Grill (personal comunication)

Basking type- Andrea Grill (personal comunication)

Basking site- Andrea Grill (personal comunication)

Maniola telmessia

Overwintering stage- Andrea Grill (personal comunication)

Voltinism-T

Pupal environment (on ground or grass blade)- Andrea Grill (personal comunication)

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part- Andrea Grill (personal comunication)

Hostplant age- Andrea Grill (personal comunication)

Larval environment- Andrea Grill (personal comunication)

Egg laying type- Andrea Grill (personal comunication)

Egg laying location- Andrea Grill (personal comunication)

Altitude-EL

Flight months (minimum – May to September)-T

Flight months (maximum – January to October)-GP

Adult feedng (cistus)- Andrea Grill (personal comunication)

Adult roosting- Andrea Grill (personal comunication)

Mate locating type- Andrea Grill (personal comunication)

Mate locating location- Andrea Grill (personal comunication)

Basking type- Andrea Grill (personal comunication)

Basking site- Andrea Grill (personal comunication)

Maniola helicarnassus

Overwintering stage- Andrea Grill (personal comunication)

Voltinism-T

Pupal location (on ground or in grass blade)- Andrea Grill (personal comunication)

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Maniola halicarnassus. The IUCN Red List of Threatened Species 2015: e.T174425A1413852. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174425A1413852.en. Downloaded on 15 November 2019

Hostplant part- Andrea Grill (personal comunication)

Hostplant age- Andrea Grill (personal comunication)

Larval environment- Andrea Grill (personal comunication)

Egg laying type- Andrea Grill (personal comunication)

Egg laying location- Andrea Grill (personal comunication)

Altitude-GP

Flight months (minimum – May only)-EL

Flight months (maximum – May to September)-T/GP

Adult feeding (cistus)- Andrea Grill (personal comunication)

Adult feeding (rest)-IUCN

Adult roosting- Andrea Grill (personal comunication)

Mate locating type- Andrea Grill (personal comunication)

Mate locating location- Andrea Grill (personal comunication)

Basking type- Andrea Grill (personal comunication)

Basking site- Andrea Grill (personal comunication)

Maniola cypricola

Overwintering stage- Andrea Grill (personal comunication)

Voltinism- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Maniola cypricola. The IUCN Red List of Threatened Species 2015: e.T173292A53719688. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173292A53719688.en. Downloaded on 15 November 2019.

Pupal location (on ground or grass blade)- Andrea Grill (personal comunication)

Hostplant family-IUCN

Hostplant part- Andrea Grill (personal comunication)

Hostplant age- Andrea Grill (personal comunication)

Larval environment- Andrea Grill (personal comunication)

Egg laying type- Andrea Grill (personal comunication)

Egg laying location- Andrea Grill (personal comunication)

Flight months- Özden, O., and David J. Hodgson. "Butterflies(Lepidoptera) highlight the ecological value of shrubland and grassland mosaics in Cypriot garrigue ecosystems." European Journal of Entomology 108.3 (2011): 431-437.

Adult feeding (cistus)- Andrea Grill (personal comunication)

Adult feeding (rest)- Özden, O., and David J. Hodgson. "Butterflies(Lepidoptera) highlight the ecological value of shrubland and grassland mosaics in Cypriot garrigue ecosystems." European Journal of Entomology 108.3 (2011): 431-437.

Adult roosting (tree canopy)- Özden, O., and David J. Hodgson. "Butterflies(Lepidoptera) highlight the ecological value of shrubland and grassland mosaics in Cypriot garrigue ecosystems." European Journal of Entomology 108.3 (2011): 431-437.

Adult roosting (rest)- Andrea Grill (personal comunication)

Mate locating type- Andrea Grill (personal comunication)

Mate locating location- Andrea Grill (personal comunication)

Basking type- Andrea Grill (personal comunication)

Basking site- Andrea Grill (personal comunication)

Hymponephele maroccana

Voltinism-T

Wingspan-TK

Hostplant family (exact hostplant sp. unclear)-TK

Altitude-T

Flight months-T

Adult feeding (photos)-MR

Hyponephele lupina

Overwintering stage-CRA

Overwintering location-CL

Voltinsm-T

Pupal location-CL

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-GP

Flight months (minimum – June to July)-BK

Flight months (maximum – April to October)-GP

Adult feeding-CL

Adult roosting-CL

Hyponephele lycaon

Overwintering stage-B

Overwintering location-GBB

Voltinism-T

Pupation location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-B

Egg laying type-B

Egg laying location-CRA

Altitude-GP

Flight months (minimum – July and August) -BK

Flight months (maximum – May to September)-GP

Adult feeding-B

Basking type (lateral)-GBF

Basking type (dorsal absorbtion)-MR

Basking site-MR

Aphantopus hyperantus

Overwintering stage-B

Overwintering location-CRA

Voltinism-T

Pupal location-B/HK

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant part-D

Hostplant age-D

Larval environment (egg laying and pupal location suggest some time at ground layer)-B

Hostplant patch size-D

Egg laying type (single)-NS

Egg laying type (small clusters)-B

Egg laying location-D

Egg laying aspect-D

Altitude (minimum)-T

Altitude (maximum)-GP

Flight months-T

Adult feeding-B

Adult roosting (shrub, tree canopy)-D

Adult roosting (rest)-HK

Mate locating type-Rutowski, Ronald L. "Variation of eye size in butterflies: inter-and intraspecific patterns." Journal of Zoology 252.02 (2000): 187-195.

Mate locating location-D

Basking type-D

Basking site-D

Pyronia janiroides

Voltinism-T

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-T

Flight months-T

Pyronia tithonus

Overwintering stage-B

Overwintering location-CRA

Voltinism-T

Pupal location-B

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-CRA

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-GP

Flight months (minimum – July to August)-BK

Flight months (maximum – May to September)-GP

Adult feeding-B

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-NS

Basking site-D

Pyronia cecilia

Overwintering stage-CRA

Overwintering location-GBB

Voltinism-D

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type-LF

Egg laying location-LF

Altitude-GP

Flight months (minimum – June to August)-T/EL

Flight months (maximum –May to September) - GP

Adult feeding (mineral)-GBF

Adult feeding (herb)-PO

Basking type -PO

Basking site -PO

Pyronia bathseba

Overwintering stage-CRA

Overwintering location-GBB

Voltinism-T

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant part-GBB

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment (photos)-PYR

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months (May to July or August)-LF

Flight months (April to July)-T/EL

Adult feeding (photo)-TK

Basking type (dorsal)-MR

Basking (Lateral)-GBF

Basking site-MR

Coenonympha tullia

Overwintering stage-B

Overwintering location-NS

Voltinism-T

Pupal location-HK

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-NS

Hostplant age-D

Larval environment- B

Hostplant patch size-D

Egg laying type-B

Egg locating location-D

Egg laying aspect-D

Altitude-EL

Flight months (minimum – July only)-HK

Flight months (maximum – June to August)-T/EL /BK

Adult feeding (slightly unclear)-B

Adult roosting-D

Mate location type-BK

Mate locating location-D

Basking type-NS

Basking site-D

Coenonympha rhodopensis

Overwintering stage-CRA

Voltinism-T

Pupal environment (photo)-PYR

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Coenonympha rhodopensis. The IUCN Red List of Threatened Species 2010: e.T173296A6986821. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173296A6986821.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Altitude-EL

Flight months-GP

Adult feeding (photos)-MR

Coenonympha pamphilus

Overwintering stage-T

Overwintering location (tall sward)-GBB

Overwintering location (field/ground layer)-NS

Overwintering location (rest)-CRA

Voltinism (bivoltine/trivoltine)-EL

Voltinism (univoltine, bivoltine and trivoltine)-AP

Pupal location-HK

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-NS

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum – May to June and July to August)-HK

Flight months (maximum – February to November)-T

Adult feeding-B

Adult roosting-D

Mate locating type (lekking)-NS

Mate locating type (all others)-D

Mate locating location-D

Basking site-D

Basking method-PO

Coenonympha thyrsis

Overwintering stage-PYR

Voltinism-T

Wingspan-TK

Hostplant family (unspecified Poaceae)-TK

Pupal location (photo)-PYR

Larval environment (photo)-PYR

Altitude-T

Flight months (minimum – May to July)-T

Flight months (maximum – April to October)-GP

Adult feeding-PYR

Basking method- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Coenonympha thyrsis. The IUCN Red List of Threatened Species 2015: e.T173214A64557835. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173214A64557835.en. Downloaded on 15 November 2019.

Coenonympha corinna

Overwintering stage-LF

Voltinism-T

Voltinism (univoltine + partial 2nd generation)-LF

Forewing length-LF

Wingspan-TK

Hostplant family (specificity uncertain, as one hp named and 'others')- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Coenonympha corinna. The IUCN Red List of Threatened Species 2015: e.T173221A64556722. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173221A64556722.en. Downloaded on 15 November 2019.

Hostplant specificity-TK

Egg laying type-LF

Egg laying location-LF

Altitude-T

Flight months (minimum – May to August)-T

Flight months (maximum – May to September)-EL

Adult feeding (photos)-MR

Coenonympha corinna elbana

Overwintering stage-Jutzeler, D., Biermann, H. and De Bros, E., 1996. Élevage de Coenonympha corinna elbana (Staudinger, 1901) du Monte Argentario (Toscane, Italie) avec explication géologique de l'aire de répartition du complexe corinna (Lepidoptera: Nymphalidae, Satyrinae). Linn. Belg, 15(8), pp.332-347

Voltinism (bivoltine)-EL

Voltinism (trivoltine?)-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-T

Flight months (minimum - May to August)-T

Flight months (maximum - May to October)- EL

Adult feeding (image)-TK

Coenonympha dorus

Overwintering stage-CRA

Overwintering location-GBB

Pupal location (photo)-PYR

Forewing length-LF

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type (photo)-PYR

Egg laying location-LF

Voltinism-T

Altitude-EL

Adult feeding (herbs)-PO

Adult feeding (animal)-GBF

Mate locating type-PO

Mate locating location-PO

Basking type-PO

Basking site-PO

Coenonympha vaucheri

Voltinism-T

Wingspan-TK

Hostplant family-TK

Egg laying location- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Coenonympha vaucheri. The IUCN Red List of Threatened Species 2015: e.T62148787A62152426. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148787A62152426.en. Downloaded on 15 November 2019.

Altitude-T

Flight months-T

Coenonympha arcania

Overwintering location-CRA

Overwintering stage-B

Voltinism (partial 2nd generation-EL

Voltinism (rest)-T

Pupal location (ground layer)-LF

Pupal location (rest)-CRA

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-B

Egg laying type (single)-B

Egg laying type (small clusters)-CRA

Egg laying location-CRA

Altitude-GP

Flight months (minimum – June to July)-HK

Flight months (maximum - May to September)-GP

Flight months (April to August)-T

Adult feeding -PO

Adult roosting-PO

Mate locating type (territorial perching)-PO

Mate location type (patrolling)-BK

Mate location type (perching but no distinction between territoriality and not)- Wickman, Per-Olof. "Sexual selection and butterfly design-a comparative study." Evolution (1992): 1525-1536.

Mate locating location-PO

Basking type (lateral)-PO

Basking site (shrub + tall herb/grass)-PO

Coenonympha orientalis

Voltinism-EL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-EL

Flight months-EL

Coenonympha darwiniana

Overwintering stage-AP

Voltinism–T

Pupal location (photo)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family (undefined Poaceae)-LF

Hostplant specificity-TK

Larval environment (photo)-PYR

Altitude-EL

Flight months-T

Adult feeding (photos)-MR

Coenonympha gardetta

Overwintering stage-AP

Voltinism-T

Pupal location- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Coenonympha gardetta. The IUCN Red List of Threatened Species 2010: e.T173245A6979358. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173245A6979358.en. Downloaded on 15 November 2019.

Forewing length-AP

Wingspan-TK

Hostplant family (undefined Poaceae)-LF

Hostplant specificity-TK

Egg laying type-CRA

Egg laying location (short herb)-IUCN

Egg laying location (rest)-CRA

Altitude (minimum)-EL

Altitude (maximum)-EL

Flight months-T

Adult feeding (photos)-MR

Coenonympha arcanoides

Voltinism-T

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Coenonympha arcanioides. The IUCN Red List of Threatened Species 2015: e.T62148600A62152349. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148600A62152349.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Altitude-T

Flight months-T

Coenonympha leander

Overwintering stage-CRA

Voltinism-T

Pupal location-CL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-GP

Flight months-T

Adult feeding-CL

Coenonympha glycerion

Overwintering stage-B

Overwintering location-GBB

Voltinism (univoltine)-T/EL/GP/AP

Voltinism (univoltine and bivoltine)-BK

Pupation location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-B

Egg laying type-B

Egg laying location-B

Altitude-EL

Flight months-BK

Adult feeding (animal)-CL

Adult feeding (rest)-B

Basking type-MR

Basking site (herbs)-MR

Coenonympha hero

Overwintering stage-B

Overwintering location-CRA

Voltinism-T

Pupal location-HK

Forewing length (min)-AP

Forewing length (max)—B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment-B

Egg laying type-B

Egg laying location-HK

Altitude-EL

Flight months (minimum – May to June) -BK

Flight months (maximum – May to July) –T/EL/HK

Adult feeding-B

Adult roosting-MR

Mate locating type-BK

Basking type-MR

Basking site-MR

Coenonympha oedippus

Overwintering stage-B

Overwintering location-CRA

Voltinism-T

Pupation location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment-B

Egg laying type-B

Egg laying location-CRA

Altitude-EL

Flight months-T

Adult feeding (not entirely clear) -B

Adult roosting- Andras Ambrus (Personal communications)

Basking type-MR

Basking site (grass)-MR

Basking site (rest)- Andras Ambrus (Personal communications)

Coenonympha fettigii

Wingspan-TK

Hostplant family- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Coenonympha fettigii. The IUCN Red List of Threatened Species 2015: e.T62148685A62152374. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148685A62152374.en. Downloaded on 15 November 2019.

Hostplant specificity-IUCN

Pararge aegeria

Overwintering stage-CRA

Overwintering location (shrub)-GBB

Overwintering location (rest)-CRA

Voltinism (univoltine, bivoltine and trivoltine)-BK

Pupal location (possibly ground layer?)-CRA

Pupal location (field layer)-D

Forewing length-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude-T

Flight months (minimum – June and July) -HK

Flight months (maximum - year round) -GP

Adult feeding-B

Adult roosting-D

Mate locating type-Tim Shreeve (Personal Communication)

Mate locating type-D

Mate locating location-D

Basking type-HK

Basking site- D

Pararge xiphoides

Overwintering stage-Tim Shreeve (Personal Communication)

Overwintering location- Tim Shreeve (Personal Communication)

Voltinism-T

Pupal location- Tim Shreeve (Personal Communication)

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant part- Tim Shreeve (Personal Communication)

Hostplant age- Tim Shreeve (Personal Communication)

Larval environment- Tim Shreeve (Personal Communication)

Hostplant patch size- Tim Shreeve (Personal Communication)

Egg laying type- Tim Shreeve (Personal Communication)

Egg laying location- Tim Shreeve (Personal Communication)

Altitude-T

Flight months-T

Adult feeding- Tim Shreeve (Personal Communication)

Adult roosting- Tim Shreeve (Personal Communication)

Mate locating type- Tim Shreeve (Personal Communication)

Mate locating location- Tim Shreeve (Personal Communication)

Basking type- Tim Shreeve (Personal Communication)

Basking site- Tim Shreeve (Personal Communication)

Pararge xiphia

Overwintering stage-Tim Shreeve (Personal Communication)

Overwintering location- Tim Shreeve (Personal Communication)

Voltinism-T

Pupal location- Tim Shreeve (Personal Communication)

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant part- Tim Shreeve (Personal Communication)

Hostplant age- Tim Shreeve (Personal Communication)

Larval environment- Tim Shreeve (Personal Communication)

Hostplant patch size- Tim Shreeve (Personal Communication)

Egg laying type- Tim Shreeve (Personal Communication)

Egg laying location- Tim Shreeve (Personal Communication)

Altitude-T

Flight months-T

Adult feeding- Tim Shreeve (Personal Communication)

Adult roosting- Tim Shreeve (Personal Communication)

Mate locating type- Tim Shreeve (Personal Communication)

Mate locating location- Tim Shreeve (Personal Communication)

Basking type- Tim Shreeve (Personal Communication)

Basking site- Tim Shreeve (Personal Communication)

Lasiommata megera

Overwintering stage-B

Overwintering location-CRA

Overwintering location (shrub)-GBB

Voltinism (univoltine, bivoltine and trivoltine)-GP

Pupal location (ground layer – 'in litter')-CRA

Pupal location (field layer)-D

Forewing length (min)-B

Forewing length (max)-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-NS

Hostplant age-D

Larval environment-B

Hostplant patch size-D

Egg laying type-B

Egg laying location-D

Egg laying aspect-D

Altitude-GP

Flight months (minimum – May to July) -HK

Flight months (maximum – February to November) -GP

Adult feeding-B

Adult roosting-D

Mate locating type-D

Mate locating location (hilltopping on bare earth)-Argentona, I. E. S., and Secció de Ciències Naturals. "Hilltopping de les papallones diürnes al turó d'Onofre Arnau (Mataró, Maresme)."

Mate locating location (rest)-D

Basking type-PO

Basking site (man-made structures)-PO

Basking site (rest)-D

Lasiommata petropolitana

Overwintering stage-T

Overwintering location (surface and short sward)-GBB

Overwintering location (buried)-HK

Voltinism (univoltine and univoltine with a partial 2nd generation)-T

Voltinism (bivoltine)-GP

Pupal environment-HK

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-B

Egg laying type-B

Egg laying location-CRA

Altitude-T

Flight months (minimum – May to June)-BK/HK

Flight months (maximum – April to August)-T/EL

Flight months (May to September)-GP

Adult feeding-B/HK

Adult roosting-T/HK

Basking site-T

Mate locating type-BK

Mate locating location-BK

Basking type-HK

Basking site-HK

Lasiommata maera

Overwintering stage-B

Overwintering location-CRA

Pupal location (buried under stones)-HK

Pupal location (rest)-CRA

Voltinism (univoltine, bivoltine and trivoltine)-T

Forewing length-B

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-B

Egg laying type (single)-B

Egg laying type (small clusters)-HK

Egg laying location-CRA

Altiude-EL

Flight months (minimum – June and July)-BK

Flight months (maximum – January to October)-GP

Adult feeding-B

Adult roosting-HK

Mate locating type-BK

Mate locating location (bare rock)-CL

Mate locating location-T/BK

Basking type-HK

Basking site (bareground)-PO

Basking site (rest)-HK

Lasiommata maedowaldoi

Voltinism-T

Wingspan-TK

Hostplant family (unknown grass)- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Lasiommata meadewaldoi. The IUCN Red List of Threatened Species 2015: e.T62148689A62152747. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148689A62152747.en. Downloaded on 15 November 2019.

Egg laying location-IUCN

Altitude-T

Flight months-T

Adult roosting-IUCN

Lopinga achine

Overwintering stage-B

Overwintering location-CRA

Voltinism-T

Pupal location-CRA

Forewing length (min)-B

Forewing length (max)-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment (egg laying location suggests some time at ground layer)-B

Egg laying type-B

Egg laying location-HK/B

Altitude-EL

Flight months (minimum – June to July)-T/EL/HK

Flight months (maximum – May to July)-BK

Adult feeding (sap+mineral)-LF

Adult feeding (rest)-HK/B

Adult roosting-LF

Mate locating type-HK

Basking type-HK

Basking site-HK

Lasiommata paramegaera

Overwintering stage-PYR

Voltinism-EL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Larval environment (photo)-PYR

Altitude-EL

Flight months-EL

Egg laying type (photo)-PYR

Egg laying location-PYR

Egg laying aspect-PYR

Adult feeding (photos)-MR

Basking type (photo)-PYR

Basking site (PHOTO)-PYR

Ypthima Asterope

Overwintering stage ('highly likely')- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and

present status in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Voltinism-T

Pupal location- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and present status in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Wingspan-TK

Hostplant family- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and present status in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Hostplant specificity-TK

Hostplant phenology-FE

Larval environment (photo)-PYR

Egg laying location (captivity)- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and present status in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Altitude-GP

Flight months (3-6, 10-11)- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and present status in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Flight months (rest)-T

Egg laying (ground)-PYR

Adult feeding- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and present status in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Mate locating type-PYR

Mate locating location-PYR

Adult roosting- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and present status in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Basking site- John, E. ,. Gascoigne-Pees, M. and TORBEN B. Larsen. "Ypthima asterope (Klug, 1832)(Lepidoptera: Nymphalidae, Satyrinae): Its biogeography, lifecycle, ecology and present status

in Cyprus, with additional notes from Rhodes and the eastern Mediterranean." Entomologist's Gazette 61.1 (2010): 1

Kirinia roxelana

Overwintering stage-T

Voltinism-T

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Egg laying location-CRA

Altitude-GP

Flight months (minimum – May to September) - EL

Flight months (maximum – March to October) - GP

Kirinia climene

Overwintering stage-CL

Overwintering location-CL

Voltinism–T

Pupal location-CL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Larval environment-CL

Egg laying type-PYR

Egg laying location-CL

Altitude (minimum)-T

Altitude (maximum)-GP

Flight months-T

Adult feeding-CL

Liminetis celtis

Overwintering stage-T

Overwintering location-GBB

Voltinism (partial second brood)-EL

Voltinism (rest)-T

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Larval environment-CRA

Egg laying type-CRA

Egg laying location-CRA

Altitude-EL

Flight months (August to October rest)-EL

Flight months-T

Adult feeding (photos)-MR

Adult feeding (mineral)-GBF

Basking-LF

Danaus plexippus

Overwintering stage (none)-T

Overwintering stage (adult)-B

Voltinism-T

Forewing length (min)-B

Forewing length (max)-NS

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Laral environment-B

Altitude-T

Flight months (minimum- March to December)-EL

Flight months (maximum- year round)-T

Egg laying type-B

Adult feeding-B

Danaus chrysippus

Overwintering stage-T

Voltinism-T

Forewing length (male min)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-T

Hostplant specificity-T

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying location-https://www.butterfliesoffrance.com/html/Danaus%20chrysippus.htm

Altitude-EL

Flight months (minimum- March to November)-EL

Flight months (maximum- year round)-T

Adult feeding (photo)-TK

Basking type (not entirely convincing)-PYR

Lyceanidae

Callophrys rubi

Overwintering stage-D

Overwintering location (buried)-GBB

Overwintering location-D

Voltinism (univoltine)-D

Voltinism (others)-TK

Ant association D

Forewing length-AP

Wingspan-TK

Pupal location-D

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type -D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months (August + September)-TK

Flight months (rest)-TK

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Callophrys avis

Overwintering stage-LF

Overwintering location (buried)-GBB

Overwintering location (rest)-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Forewing length (rest)-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Basking type-MR

Basking site-MR

Thecla betulae

Overwintering stage-D

Overwintering location (tree)-GBB

Overwintering location (rest)-D

Voltinism-TK

Pupal location-D

Ant association-D

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-EL

Flight months (June only)-TK

Flight months-EL

Forewing length (rest)-AP

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking method-D

Basking site-D

Cigaritis zohra (Apharitis zohra)

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Apharitis zohra. The IUCN Red List of Threatened Species 2015: e.T62148612A62150452. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148612A62150452.en. Downloaded on 15 November 2019.

Overwintering location-IUCN

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Pupal location-IUCN

Hostplant family-TK

Hostplant specificity-TK

Egg laying location-IUCN

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment, -IUCN

Altitude-TK

Flight months-TK

Cigaritis allardi (Apharitis allardi)

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Apharitis allardi. The IUCN Red List of Threatened Species 2015: e.T62148713A62150188. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148713A62150188.en. Downloaded on 15 November 2019.

Overwintering location-IUCN

Voltinism-TK

Wingspan -TK

Ant association-IUCN

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-IUCN

Egg laying location-IUCN

Altitude-TK

Flight months-TK

Cigaritis siphax

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Altitude-TK

Flight months -TK

Tomares ballus

Overwintering stage-LF

Overwintering location-LF

VoltinismTK

Pupal location-LF

Forewing length-AP

Wingspan-TK

Ant association-CRA

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-PYR

Egg laying type-LF

Egg laying location-CRA

Altitude-EL

Flight months (January and Febrary) -TK

Flight months-EL

Adult feeding (photo)-PYR

Mate locating type-LF

Mate locating location-LF

Basking type-MR

Basking site-MR

Tomares nogelii

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Altitude-TK

Flight months (April)-TK

Flight month (rest)-EL

Hostplant phenology-FE

Hostplant growth (type)-FE

Tomares mauretanicus

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Tomares mauretanicus. The IUCN Red List of Threatened Species 2015: e.T62148561A62152097. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148561A62152097.en. Downloaded on 15 November 2019.

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Deudorix livia

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-TK

Flight months-TK

Neozyphyrus quercus

Overwintering stage-D

Overwintering location-D

Voltinism-TK

Pupal environment-D

Ant association-D

Forewing length (min)-EL

Forewing length (max)-AP

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-D

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months (min)-EL

Flight months (max)-TK

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Laeosopis roboris/evippus

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Ant association-CRA

Forewing length (min)-EL

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying location-LF

Egg laying type-LF

Altitude-EL

Flight months-EL

Forewing length (max)-AP

Adult feeding (photos)-PYE

Mate locating type-https://www.butterfliesoffrance.com/html/Laeosopis%20roboris.htm

Satyrium w-album

Overwintering stage-D

Overwintering location-D

Voltinism-TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-D

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Satryrium pruni

Overwintering stage-D

Overwintering location-D

Voltinism-TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplants family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-D

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Satryrium esculi

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Forewing length-AP

Wingspan-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Pupal location (photo)-PYR

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Hostplant age-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-CRA

Mate locating type-https://www.butterfliesoffrance.com/html/Laeosopis%20roboris.htm

Basking type-MR + PYR

Basking site-PYR

Satryrium acaciae

Overwintering stage-LF

Overwintering location-LF

Voltnism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (min)-AP

Forewing length (max)-EL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Hostplant age-CRA

Larval environment (ground layer)-CRA

Larval environment (rest-photo)-CL

Egg laying type-LF

Egg laying location-LF

Egg laying aspect-CRA

Altitude-EL

Flight months (May + August)-TK

Flight months (rest)-EL

Mate locating type (perching or territorial perching)-BK

Mate locating location-BK

Basking site-BK

Basking type-PYR

Basking site-BK

Satryrium ilicis

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-B

Ant association-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-LF

Egg laying location-LF

Hostplant part-CRA

Hostplant age-CRA

Larval environment-CL

Altitude-EL

Flight months-EL

Adult feeding-B

Mate locating type-BK

Basking type-MR

Basking site-PYR

Satryrium spini

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location (groundlayer)-B

Pupal location (rest)-LF

Ant association-CRA

Forewing length-AP

Wingspan-TK

Larval environment-CL

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Hostplant age-CRA

Egg laying type-LF

Egg laying location-LF

Eg laying aspect-CRA

Altitude-EL

Flight months (august)-TK

Flight months (rest)-EL

Adult feeding-B

Mate locating type-BK

Mate locating location-BK

Basking type-MR

Basking site-MR

Lycaena phlaeas

Overwintering stage-D

Overwintering location (surface)-GBB

Overwintering location-D

Voltinism-TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplants family -B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-D

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months (February)-TK

Flight months (rest)-EL

Adult feeding (shrubs)-B

Adult feeding (rest)-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Lycaena dispar

Overwintering stage-D

Overwintering location-D

Voltinism (univoltinism)-D

Voltinism (others)-TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplants family -B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-D

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months (April)-TK

Flight months (rest)-EL

Adult feeding (shrubs +honeydew)-D

Adult feeding (rest)-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Lycaena helle

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Egg laying aspect-LF

Altitude-EL

Flight months- EL

Adult feeding-B

Adult roosting-BK

Mate locating type-BK

Mate locating location-BK

Basking type-PO

Basking site-PO

Lycaena ottomana

Overwintering stage-PYR

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months (March + October)-TK

Flight months (rest)-EL

Adult feeding (photo)-PYR

Lycaena cadens

Overwintering stage-CL

Voltinism-TK

Pupal location-CL

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part(photos)-PYR

Larval environment (photo)-CL

Egg laying type (single) (photo)-PYR

Egg laying location-CL

Altitude-EL

Flight months (September)-TK

Flight months (rest)- EL

Adult feeding (photo)-PYR

Basking site-CL

Lycaena hippothoe

Overwintering stage-HK

Overwintering location-HK

Voltnism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment (photos)-PYR

Egg laying type-HK

Egg laying location-HK

Egg laying aspect-HK

Altitude-EL

Flight months (September)-TK

Flight months (rest)-EL

Adult feeding-B

Adult roosting (unclear)-HK

Mate locating type-BK

Mate locating location-BK

Basking type-HK

Basking site (based on habitat pics)-PYR

Lycaena thersamon

Overwintering stage-CL

Voltinism (univoltinism uncertain)-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Egg laying type-CL

Egg laying location-CL

Egg laying aspect-CL

Altitude-EL

Flight months (February, March, November, December)-TK

Flight months (rest)-EL

Adult feeding (photo)-CL

Adult mating strategy-BK

Basking site-CL

Lycaena phoebus

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Lycaena alciphron

Overwintering stage-LF

Overwintering location-GBB

Voltinism-TK

Pupal location (photo)-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment (photos)-PYR

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Adult roosting-BK

Mate locating type-BK

Basking type-MR

Basking site-MR

Lycaena virgaurae

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Pupal location, egg laying type, egg laying location, overwintering stage, overtwintering location,-LF

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant age-CRA

Larval environment-CRA

Hostplant part (photo)-PYR

Altitude-EL

Flight months-EL

Adult feeding-B

Adult roosting-BK

Mate locating type-BK

Mate locating location-BK

Basking type-MR

Basking site-MR

Lycaena thetis

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-BK

Hostplant specificity-BK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Adult feeding (photo)-MR

Mate locating type-MR

Lycaena tityrus

Overwintering stage-LF

Overwintering location-CL

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-CL

Egg laying type-LF

Egg laying location-LF

Egg laying aspect-CL

Altitude -EL

Flight months-EL

Adult feeding (photo)-CL

Mate locating type-BK

Basking type-MR

Basking site-MR

Cupido minimus

Overwintering stage-D

Overwintering location-D

Voltinism (univoltine)-TK

Voltinism (rest)-D

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating strategy-D

Basking type-D

Basking site-D

Cupido alcetas

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Cupido alcetas. The IUCN Red List of Threatened Species 2010: e.T174394A7064167. Downloaded on 15 November 2019.

Forewing length (minimum)-AP

Forewing length (maximum)-EL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Mate locating type-BK

Mate locating location-BK

Basking type (unsure)-MR

Basking site-MR

Cupido argiades

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Forewing length (minimum)-AP

Forewing length (maximum)-EL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment (photos)-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Mate locating type-PO

Mate locating location-PO

Basking type (unsure)-MR

Basking site-MR

Cupido decoloratus

Overwintering stage-CL

Voltinism-TK

Forewing length-AP

Wingspan—TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying location-CL

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Cupido osiris

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-CL

Mate locating type-https://www.butterfliesoffrance.com/html/Cupido%20osiris.htm

Mate locating location-https://www.butterfliesoffrance.com/html/Cupido%20osiris.htm

Basking type-https://www.butterfliesoffrance.com/html/Cupido%20osiris.htm

Cupido lorquinii

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Cupido lorquinii. The IUCN Red List of Threatened Species 2015:

e.T174266A53710347. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174266A53710347.en. Downloaded on 15 November 2019.

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-IUCN

Larval environment-IUCN

Egg laying location-IUCN

Altitude-EL

Flight months-EL

Adult feeding (photo)-MR

Adult feeding (mineral)-GBF

Cupido carswelli

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Lampdies boeticus

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment (attended)-CRA

Larval environment (rest)-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Adult feeding-B

Basking type (uncertain)-MR

Basking site-MR

Leptotes pirithous

Overwintering stage-LF

Overwintering location-GBB

Voltinism-TK

Pupal location-B

Ant association-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-CRA

Altitude-EL

Flight months-EL

Adult feeding-B

Basking type (uncertain)-MR

Basking site-MR

Tarucus balkanicus

Overwintering stage-CL

Overwintering location-CL

Voltinism-TK

Pupal location-CL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-EL

Flight months-EL

Adult feeding-CL

Mate locating location-CL

Tarucus theophrastus

Voltinism-TK

Pupal location-PYR

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-PYR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude-EL

Flight months-EL

Tarucus rosaceus

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-TK

Cacyreus marshalli

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Adult roosting (includes manmade, as often on planted polygonums)-PYR

Basking type-PYR

Basking site (includes manmade, as often on planted polygonums)-PYR

Cyclyrius webbianus

Overwintering stage-PYR

Voltinism-TK

Pupal location- PYR

Hostplant family-TK

Hostplant specificity-TK

Larval environment- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Cyclyrius webbianus. The IUCN Red List of Threatened Species 2010: e.T173222A6976115. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173222A6976115.en. Downloaded on 15 November 2019.

Egg laying type (photo)-PYR

Altitude-TK

Adult feeding (photos)-MR

Aazanus jesous

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Egg laying type (photo)-MR

Azanus ubaldus

Overwintering stage-PYR

Voltinism-TK

Wingspan-TK

Pupal location-PYR

Hostplant family-TK

Hostplant specificity-TK

Hostplant part- The life cycle and ecology of Azanus ubaldus (Stoll, 1782) (Lepidoptera: Lycaenidae) on Gran Canaria-Martin Gascoigne-Pees

Larval environment-PYR

Egg laying type (photo)- The life cycle and ecology of Azanus ubaldus (Stoll, 1782) (Lepidoptera: Lycaenidae) on Gran Canaria-Martin Gascoigne-Pees

Egg laying location (photo)- The life cycle and ecology of Azanus ubaldus (Stoll, 1782) (Lepidoptera: Lycaenidae) on Gran Canaria-Martin

Altitude-TK

Mate locating type-PYR

Mate locating location-PYR

Zizeeria knysna

Overwintering stage-WIEMERS, M., The butterflies of the Canary Islands A survey on their distribution, biology and ecology.

Voltinism-TK

Ant association-CRA

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Adult feeding-GBF

Zizeeria karsandra

Overwintering stage-PYR

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Luthrodes galba

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part-CL

Egg laying location-CL

Altitude-TK

Chilades trochylus

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Plebejus argus

Overwintering stage-D

Overwintering locationD

Voltinism-TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Plebejus sephirus

Overwintering stage-CL

Voltinism-TK

Pupal location-CL

Ant association- Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-CL

Egg laying location-CL

Egg laying aspect-CL

Adult feeding (photos)-MR

Plebejus hespericus

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Plebejus hespericus. The IUCN Red List of Threatened Species 2015: e.T39489A53713034. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T39489A53713034.en. Downloaded on 15 November 2019.

Voltinism-TK

Pupal location-IUCN

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-IUCN

Egg laying location-IUCN

Flight months-GBB

Adult feeding-GBF

Plebejus idas

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment (photos)-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Adult roosting-HK

Mate locating type-BK

Basking type (uncertain)-MR

Basking site-MR

Plebejus bellieri

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Plebejus agyrognomon

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Hostplant age-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Mate locating type-BK

Basking type (uncertain)-MR

Basking site-MR

Plebejus martini

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Hostplant family-TK

Hostplant specificity-TK

Larval environment- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Plebejus martini. The IUCN Red List of Threatened Species 2015: e.T62148564A62151191. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148564A62151191.en. Downloaded on 15 November 2019.

Egg laying location-IUCN

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-TK

Plebejus eurypilus

Overwintering stage-CL

Overwintering location-CL

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Larval environment-CL

Egg laying location-CL

Egg laying aspect-CL

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Mate locating type-CL

Mate locating location-CL

Plebejus allardi

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Plebejus optilete

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (animal)-BK

Adult feeding (rest)-B

Adult roosting-HK

Basking type (uncertain)-MR

Basking site-MR

Plebejus psyloritus

Voltinism-TK

Larval environment (ant attendance unspecified)- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Plebejus psyloritus. The IUCN Red List of Threatened Species 2015: e.T173274A53713070. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173274A53713070.en. Downloaded on 15 November 2019.

Altitude-EL

Flight months-EL

Plebejus vogelii

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Larval environment- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Plebejus vogelii. The IUCN Red List of Threatened Species 2015: e.T62148736A62151291. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148736A62151291.en. Downloaded on 15 November 2019.

Egg laying location-IUCN

Hostplant specificity-TK

Altitude-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Adult feeding (photos)-MR

Mate locating type-IUCN

Mate locating location-IUCN

Plebejus glandon

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-LF

Egg laying location-LF

Hostplant part-CRA

Larval environment-CRA

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Adult roosting-HK

Mate locating type-HK

Mate locating location-HK

Agriades aquilo

Overwintering stage-CRA

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Altitude-EL

Flight months-EL

Mate locating type- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Plebejus aquilo. The IUCN Red List of Threatened Species 2010: e.T174249A7037049. Downloaded on 15 November 2019.

Mate locating location-IUCN

Agriades orbitulus

Overwintering stage-LF

Voltinsm-TK

Wingspan-TK

Forewing length-AP

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-MR

Adult roosting-HK

Basking site-HK

Plebejus pyrenaicus

Overwintering stage-LF

Voltinism-TK

Pupal location-CL

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Plebejus pyrenaicus. The IUCN Red List of Threatened Species 2010: e.T173269A6982730. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173269A6982730.en. Downloaded on 15 November 2019.

Egg laying type-LF

Egg laying location-LF

Altitude-TK

Adult feeding-GBB

Plebejus zullichi

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Plebejus zullichi. The IUCN Red List of Threatened Species 2015: e.T701A53713080. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T701A53713080.en. Downloaded on 15 November 2019.

Overwintering location-Munguira, ML, Barea-Azcón, JM, Castro, S., Olivares, J., & Miteva, S. 2015. Species recovery plan for the Zullichi's blue (Agriades zullichi). Butterfly Conservation Europe.

Voltinism-TK

Pupal location-Munguira, ML, Barea-Azcón, JM, Castro, S., Olivares, J., & Miteva, S. 2015. Species recovery plan for the Zullichi's blue (Agriades zullichi). Butterfly Conservation Europe.

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-EL

Flight months-EL

Hostplan phenology, hostplant type-FE

Hostplant part-GBB

Larval environment-Munguira, ML, Barea-Azcón, JM, Castro, S., Olivares, J., & Miteva, S. 2015. Species recovery plan for the Zullichi's blue (Agriades zullichi). Butterfly Conservation Europe.

Egg laying type-Munguira, ML, Barea-Azcón, JM, Castro, S., Olivares, J., & Miteva, S. 2015. Species recovery plan for the Zullichi's blue (Agriades zullichi). Butterfly Conservation Europe.

Egg laying location-Munguira, ML, Barea-Azcón, JM, Castro, S., Olivares, J., & Miteva, S. 2015. Species recovery plan for the Zullichi's blue (Agriades zullichi). Butterfly Conservation Europe.

Adult feeding-GBF

Mate locating type Munguira, ML, Barea-Azcón, JM, Castro, S., Olivares, J., & Miteva, S. 2015. Species recovery plan for the Zullichi's blue (Agriades zullichi). Butterfly Conservation Europe.

Plebejus morronensis

Overwintering stage-LF

Overwintering location-LF

egg laying type, egg laying location, pupal location, -LF

Voltinism-TK

Pupal location-LF

Ant usage (not monophag)- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Aricia morronensis. The IUCN Red List of Threatened Species 2010: e.T173268A6982623. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173268A6982623.en. Downloaded on 15 November 2019.

Forewing length-EL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-IUCN

Larval environment-IUCN

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Basking type (uncertain)-MR

Basking site-MR

Plebejus nicias

Overwintering location-GBB

Overwintering stage-LF

Voltinism-TK

Pupal location-HK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology/hostplant type-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-HK

Adult roosting-HK

Basking type (uncertain)-MR

Basking site-MR

Plebejus anteros

Overwintering stage-CL

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-CL

Egg laying location-CL

Egg laying aspect-CL

Altitude-EL

Flight months-EL

Adult feeding (photos)-CL

Plebejus eumedon

Voltinism-TK

Overwintering stage, egg laying type, egg laying location, overwintering location, pupal location, -LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-CRA

Altitude-EL

Flight months-EL

Adult feeding -B

Adult roosting-HK

Baskign type-HK

Basking site-MR

Aricia agestis

Overwintering stage-D

Overwintering location-D

Voltinism (trivoltine)-TK

Voltinism (rest)-D

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Aricia Artaxerxes

Overwintering stage-D

Overwintering location-D

Voltinism - TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Polyommatus icarus

Overwintering stage-D

Overwintering location-D

Voltinism - TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Polyommatus coridon

Overwintering stage-D

Overwintering location (short sward)-GBB

Overwintering location (rest)-D

Voltinism (bivoltine) – TK

Voltinism (rest)-D

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Polyommatus hispanicus

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photo)-PYR

Adult feeding (mineral)-GBF

Basking type (dorsal)-MR

Basking site-MR

Polyommatus albicans

Overwintering stage-DIRINGER, Y., L'élevage des coridon espagnols: Polyommatus (Lysandra) albicans (HERRICH-SCHÄFFER, 1852) et Polyommatus (Lysandra) caelestissima (VERITY, 1921).

Voltinism-TK

Ant association-CRA

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Polyommatus albicans. The IUCN Red List of Threatened Species 2015: e.T174465A53719536. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174465A53719536.en. Downloaded on 15 November 2019.

Egg laying location-CRA

Altitude-EL

Flight months-EL

Adult feeding (nectar and animal)-GBF

Polyommatus dolus

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Polyommatus virgilus

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Polyommatus fulgens

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Polyommatus fulgens. The IUCN Red List of Threatened Species 2010: e.T173306A6988051. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173306A6988051.en. Downloaded on 15 November 2019.

Voltinism-TK

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Hostplant phenology-FE

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-IUCN

Egg laying location-IUCN

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Basking type (dorsal)-MR

Basking site-MR

Polyommatus aroaniensis

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Polyommatus aroaniensis. The IUCN

Red List of Threatened Species 2010: e.T173311A6988820. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173311A6988820.en. Downloaded on 15 November 2019.

Voltinism-TK

Ant association-IUCN

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-IUCN

Larval environment-IUCN

Egg laying type (photo)-Verovnik, R., Franeta, F., Popović, M. and Gascoigne-Pees, M., 2015. The discovery of Polyommatus aroaniensis (Brown, 1976) in Bosnia and Herzegovina (Lepidoptera: Lycaenidae). Neva, 36(4), pp.177-180.

Egg laying location-IUCN

Altitude-EL

Flight months-EL

Polyommatus violetae

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Polyommatus violetae. The IUCN Red List of Threatened Species 2015: e.T173202A64551919. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173202A64551919.en. Downloaded on 15 November 2019.

Overwintering location-Egg laying location-Munguira, ML, Barea-Azcón, JM, Castro,S., Olivares, J., Miteva, S. 2015. Species Recovery Plan for the Andalusian Anomalous Blue (Polyommatus violetae) . Butterfly Conservation Europe.

Voltinism-TK

Ant association-IUCN

Forewing length (male min, max and average)-GBB

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-IUCN

Larval environment-IUCN

Egg laying location-Munguira, ML, Barea-Azcón, JM, Castro,S., Olivares, J., Miteva, S. 2015. Species Recovery Plan for the Andalusian Anomalous Blue (Polyommatus violetae) . Butterfly Conservation Europe.

Altitude-TK

Flight months-GBB

Adult feeding (mineral)-MR

Adult feeding (nectar)-GBF

Adult feeding (nectar+honeydew)Egg laying location-Munguira, ML, Barea-Azcón, JM, Castro,S., Olivares, J., Miteva, S. 2015. Species Recovery Plan for the Andalusian Anomalous Blue (Polyommatus violetae) Butterfly Conservation Europe.

Adult roosting-Munguira, ML, Barea-Azcón, JM, Castro,S., Olivares, J., Miteva, S. 2015. Species Recovery Plan for the Andalusian Anomalous Blue (Polyommatus violetae) . Butterfly Conservation Europe.

Polyommatus fabressei

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Polyommatus fabressei. The IUCN Red List of Threatened Species 2015: e.T173310A64548951. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173310A64548951.en. Downloaded on 15 November 2019.

Voltinism-TK

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-IUCN

Egg laying location-IUCN

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Adult feeding (mineral)-GBF

Polyommatus humedasae

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Polyommatus humedasae. The IUCN Red List of Threatened Species 2010: e.T17941A7639699. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T17941A7639699.en. Downloaded on 15 November 2019.

Overwintering stage confirmed-MANINo, Z. and LEIGHEB, G., W. CAMERON-CURRY (1987): Descrizione degli stadi preimmaginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5(1), pp.97-101.

Overwintering location-Manino, Z., Leigheb, G., Cameron-Curry, P. and CAMERONCURRY, V., 1987. Descrizione degli stadi preimarginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5, pp.97-101.

Voltinism-MANINo, Z. and LEIGHEB, G., W. CAMERON-CURRY (1987): Descrizione degli stadi preimmaginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5(1), pp.97-101.

Forewing length (averages) -Annali Muse.Civ. St. nat. G. Doria, Genova 81:124-130 (Toso and Balleto)

Forewing length (rest)-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity- MANINo, Z. and LEIGHEB, G., W. CAMERON-CURRY (1987): Descrizione degli stadi preimmaginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5(1), pp.97-101.

Hostplant part-IUCN

Hostplant phenology-FE- MANINo, Z. and LEIGHEB, G., W. CAMERON-CURRY (1987): Descrizione degli stadi preimmaginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5(1), pp.97-101.

Hostplant growth (type)- MANINo, Z. and LEIGHEB, G., W. CAMERON-CURRY (1987): Descrizione degli stadi preimmaginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5(1), pp.97-101.

Egg laying location-MANINo, Z. and LEIGHEB, G., W. CAMERON-CURRY (1987): Descrizione degli stadi preimmaginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5(1), pp.97-101.

Altitude-AP

Flight months- MANINo, Z. and LEIGHEB, G., W. CAMERON-CURRY (1987): Descrizione degli stadi preimmaginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5(1), pp.97-101.

Adult feeding--Manino, Z., Leigheb, G., Cameron-Curry, P. and CAMERONCURRY, V., 1987. Descrizione degli stadi preimarginali di Agrodiaetus humedasae Toso & Balletto, 1976 (Lepidoptera, Lycaenidae). Boll. Mus. reg. Sci. nat. Torino, 5, pp.97-101.

Polyommatus nephohiptamenos

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Polyommatus admetus

Overwintering stage-CRA

Overwintering location-CRA

Voltinism-TK

Forewing length-AP

Ant association-CRA

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-CRA

Egg laying environment-CRA

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Polyommatus ripartii

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-CL

Ant association-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Basking type (dorsal)-MR

Basking site-MR

Polyommatus damon

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Basking type (dorsal)-MR

Basking site-MR

Polyommarus bellargus

hostplant patchiness, egg laying type, egg laying location, adult feeding, adult roosting (no information for short herb or manmade structure) , mate location type, mate locating location (no information for grass), basking method, Basking site (no information for manmade structure), july max temp, habitat structure-Shreeve copy of BIBLEcol dated 23/9/16

Overwintering stage-D

Overwintering location-D

Voltinism-TK

Pupal location-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Polyommatus coelestina

Overwintering stage-CL

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-CL

Egg laying location-CL

Egg laying aspect-CL

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Polyommatus escheri

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Basking type (uncertain)-MR

Basking site -MR

Polyommatus eleniae

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity (exact hostplant species unclear 'within one genus')-TK

Altitude-TK

Polyommatus amandus

Overwintering location-CRA

Overwintering stage-CL

Voltinism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment (ground layer)-CRA

Larval environment (rest)-CL

Egg laying type-CL

Egg laying location-CL

Altitude-EL

Flight months-EL

Adult feeding-B

Adult roosting-HK

Mate locating type-CL

Basking type (uncertain)-MR

Basking site -MR

Polyommatus dorylas

Overwintering stage-LF

Overwintering location-GBB

Voltinism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Egg laying aspect-CRA

Altitude-EL

Flight months-EL

Adult feeding-B

Adult roosting-B

Basking site-HK

Basking type-MR

Polyommatus golgus

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Polyommatus golgus. The IUCN Red List of Threatened Species 2015: e.T17940A64550866. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T17940A64550866.en. Downloaded on 15 November 2019.

Overwintering location-Munguira, ML, Castro, S, Barea-Azcón, JM, Olivares, J, Miteva, S. 2015. Species Recovery Plan for the Sierra Nevada Blue Polyommatus (Plebicula) golgus. Butterfly Conservation Europe.

Voltinism-TK

Pupal environment-IUCN

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Hostplant age-Munguira, ML, Castro, S, Barea-Azcón, JM, Olivares, J, Miteva, S. 2015. Species Recovery Plan for the Sierra Nevada Blue Polyommatus (Plebicula) golgus. Butterfly Conservation Europe.

Larval environment-IUCN

Egg laying type-IUCN

Egg laying location-IUCN

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Mate locating type-Munguira, ML, Castro, S, Barea-Azcón, JM, Olivares, J, Miteva, S. 2015. Species Recovery Plan for the Sierra Nevada Blue Polyommatus (Plebicula) golgus. Butterfly Conservation Europe.

Polyommatus nivescens

Overwintering stage-LF

Voltinism-TK

Pupal location-CRA

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Adult feeding (mineral)-GBF

Basking type (uncertain)-MR

Basking site-MR

Polyommatus atlanticus

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Polyommatus atlanticus. The IUCN Red List of Threatened Species 2015: e.T62148595A62151392. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148595A62151392.en. Downloaded on 15 November 2019.

Altitude-TK

Adult feeding (shrubs)-IUCN

Adult feeding (rest)-MR

Polyommatus semiargus

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Hostplant age-CL

Larval environment-CRA

Altitude-EL

Egg laying type-LF

Egg laying location-LF

Flight months-EL

Adult feeding-B

Basking type-MR

Basking site (ground)-MR

Basking site (rest)-HK

Polyommatus thersites

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part -CL

Hostplant age-CL

Larval environment (groundlayer)-CRA

Larval environment (rest - photo)-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Basking type (dorsal)-MR

Basking site-MR

Polyommatus andronicus

Voltinism-TK

Wingspan-TK

Hostplant family-Kolev, Z.D.R.A.V.K.O., 2005. New data on the taxonomic status and distribution of Polyommatus andronicus Coutsis & Ghavalas, 1995 (Lycaenidae). Nota lepidopterologica, 28(1), p.35.

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Polyommatus Celina

Overwintering stage- Slancarova, J., Garcia-Pereira, P., Fric, Z.F., Romo, H. and Garcia-Barros, E., 2015. Butterflies in Portuguese 'montados': relationships between climate, land use and life-history traits. Journal of insect conservation, 19(5), pp.823-836
Overwintering location-GBB

Voltinism-TK

Winspan-TK

Hostplant family (only for Tenerife)-TK

Hostplant specificity –TK

Hostplant phenology-GBB

Hostplant growth (type)-GBB

Hostplant part-GBB

Adult feeding (photos)-MR

Altitude-EL

Flight months-GBB

Adult feeding (mineral)-GBF

Basking type (dorsal)-MR

Basking site-MR

Polyommatus eros

Overwintering stage-LF

Overwintering location-CRA

Voltinism-TK

Pupal location-CL

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Hostplant age-CL

Larval environment (attended)-CRA

Larval environment (rest)-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Basking type (dorsal)-MR

Basking site-MR

Polyommatus daphnis

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Hostplant age-CL

Larval environment (photo)-CL

Egg laying type-LF

Egg laying location-LF

Adult feeding (mineral)-GBB

Adult feeding (rest)-B

Basking type (dorsal)-MR

Basking site-MR

Polyommatus punctiferus

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Polyommatus punctiferus. The IUCN Red List of Threatened Species 2015: e.T62148681A62151766. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148681A62151766.en. Downloaded on 15 November 2019.

Voltinism-TK

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-IUCN

Egg laying location-IUCN

Altitude-TK

Adult feeding (photos)-MR

Celastrina argiolus

Overwintering stage-D

Overwintering location-GBB

Voltinism-TK

Pupal environment-D

Ant association-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Maculinea arion

Overwintering stage-D

Overwintering location-D

Voltinism-TK

Pupal location-D

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-AP

Hostplant specificity-AP

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Maculinea alcon/rebeli

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type (small batch)-MR

Egg laying type (rest)-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Adult roosting-MR

Mate locating type-https://www.butterfliesoffrance.com/html/Phengaris%20alcon%20(rebeli).htm

Mate locating location-
https://www.butterfliesoffrance.com/html/Phengaris%20alcon%20(rebeli).htm

Basking type (some sort of dorsal)-MR

Basking site-MR

Maculinea teleius

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-CL

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Basking type-MR

Basking site-PYR

Maculinea nausithous

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-BA

Adult roosting-https://www.butterfliesoffrance.com/html/Phengaris%20nausithous.htm

Mate locating type-https://www.butterfliesoffrance.com/html/Phengaris%20nausithous.htm

Mate locating location-https://www.butterfliesoffrance.com/html/Phengaris%20nausithous.htm

Basking type-PYR

Basking site -https://www.butterfliesoffrance.com/html/Phengaris%20nausithous.htm

Glaucopsyche iolas

Overwintering type-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (mineral)-GBF

Glaucopsyche alexis

Overwintering stage-LF

Overwintering location-GBB

Voltinism-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment (attended)-CRA

Larval environment (rest)-CL

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (animal and mineral)-MR

Adult feeding (rest)-B

Mate locating type-HK

Basking type-MR

Basking site-MR

Glaucopsyche melanops

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length (male min and average)-GBB

Forewing length-AP

Wingspan-TK

Hostplant part-CRA

Larval environment-CRA

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding (mineral)-GBF

Adult feeding (rest - photo)-PYR

Basking type-https://www.butterfliesoffrance.com/html/Glaucopsyche%20melanops.htm

Basking site-https://www.butterfliesoffrance.com/html/Glaucopsyche%20melanops.htm

Glaucopsyche astraea

Generations -TK

Altitude-EL

Flight months-EL

Glaucopsyche paphos

Overwintering stage-PYR

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-PYR

Egg laying location-PYR

Altitude-TK

Scolitantides orion

Overwintering stage-LF

Overwintering location-LF

Voltinism-TK

Pupal location-LF

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photo)-PYR

Larval environment-CRA

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Adult roosting (shrubs and trees)-HK

Adult roosting (rest)-BK

Mate locating type-HK

Basking type (maybe dorsal absorbtion)-PYR

Basking type (rest)-https://www.butterfliesoffrance.com/html/Scolitantides%20orion.htm

Basking site-https://www.butterfliesoffrance.com/html/Scolitantides%20orion.htm

Solitantides bavius

Overwintering stage-CL

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment (attended)-CRA

Larval environment (rest)t-CL

Egg laying type-CL

Egg laying location-CL

Egg laying aspect-CL

Altitude-EL

Flight months-EL

Adult feeding-CL

Scolitantides fatma

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Pseudophilotes fatma. The IUCN Red List of Threatened Species 2015: e.T62148778A62151921. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148778A62151921.en. Downloaded on 15 November 2019.

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-IUCN

Egg laying location-IUCN

Altitude –TK

Scolitantides panoptes

Overwintering stage-GBB

Overwintering location-GBB

Voltinism-TK

Ant association-CRA

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-GBB

Larval environment- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Pseudophilotes panoptes. The IUCN Red List of Threatened Species 2010: e.T173247A6979667. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173247A6979667.en. Downloaded on 15 November 2019.

Altitude-EL

Flight months- EL

Adult feeding (mineral)-PYR

Adult feeding (nectar)-GBF

Basking type-PYR

Basking site (small herbs)-MR

Basking site (rest)-PYR

Colitantides vicrama

Overwintering stage-CL

Voltinism-TK

Wingspan-TK

Forewing length-AP

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CL

Larval environment-CRA

Egg laying location-CRA

Altitude-EL

Flight months-EL

Adult feeding-CL

Mate locating type-BK

Scolitantides baton

Overwintering stage –LF

Overwintering location-GBB

Generations-TK

Pupal location-B

Ant association-Fiedler, K., 1991. European and North West African Lycaenidae (Lepidoptera) and their associations with ants. J. Res. Lepid, 28(239), p.57.

Forewing length-AP

Wingspan, -TK

Hostplant family-B

Hostplant specificity-B

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying type-LF

Egg laying location-LF

Altitude-EL

Flight months-EL

Adult feeding-B

Hostplant part- Väisänen, R., Kuussaari, M., Nieminen, M. and Somerma, P., 1994, January. Biology and conservation of Pseudophilotes baton in Finland (Lepidoptera, Lycaenidae). In Annales Zoologici Fennici (pp. 145-156). Finnish Zoological Publishing Board, formed by the Finnish Academy of Sciences, Societas Biologica Fennica Vanamo, Societas pro Fauna et Flora Fennica, and Societas

Larval environment- Väisänen, R., Kuussaari, M., Nieminen, M. and Somerma, P., 1994, January. Biology and conservation of Pseudophilotes baton in Finland (Lepidoptera, Lycaenidae). In Annales Zoologici Fennici (pp. 145-156). Finnish Zoological Publishing Board, formed by the Finnish Academy of Sciences, Societas Biologica Fennica Vanamo, Societas pro Fauna et Flora Fennica, and Societas

Mate locating type- Väisänen, R., Kuussaari, M., Nieminen, M. and Somerma, P., 1994, January. Biology and conservation of Pseudophilotes baton in Finland (Lepidoptera, Lycaenidae). In Annales Zoologici Fennici (pp. 145-156). Finnish Zoological Publishing Board, formed by the Finnish Academy of Sciences, Societas Biologica Fennica Vanamo, Societas pro Fauna et Flora Fennica, and Societas

Mate locating location,-Väisänen, R., Kuussaari, M., Nieminen, M. and Somerma, P., 1994, January. Biology and conservation of Pseudophilotes baton in Finland (Lepidoptera, Lycaenidae). In Annales Zoologici Fennici (pp. 145-156). Finnish Zoological Publishing Board, formed by the Finnish Academy of Sciences, Societas Biologica Fennica Vanamo, Societas pro Fauna et Flora Fennica, and Societas Scientiarum Fennica.

Basking type-PYR

Basking site-PYR

Scolintantides barbagiae

Overwintering stage-PYR

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Altitude-EL

Flight months-EL

Adult feeding (photos)-MR

Scolintantides abencerragus

Overwintering stage-CRA

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Larval environment-CRA

Egg laying location-CRA

Altitude-EL

Flight months-EL

Adult feeding (mineral)-GBF

Adult feeding (others)-MR

Turanana taygetica/endymion

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. Turanana taygetica. The IUCN Red List of Threatened Species 2015: e.T174239A53713991. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T174239A53713991.en. Downloaded on 15 November 2019.

Voltinism ('uncertain')-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Egg laying location-IUCN

Altitude-EL

Flight months-EL

Adult feeding-IUCN

Heamaris lucina

Overwintering stage-D

Overwintering location (buried)-GBB

Overwintering location (others)-D

Voltinism-D

Forewing length-AP

Wingspan- Peter Eeeles, UK Butterflies -[online]
https://www.ukbutterflies.co.uk/species.php?species=lucina accessed 05/11/2019.

Pupal location-D

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology- D

Hostplant growth (type)-D

Hostplant part-D

Hostplant age-D

Larval environment-D

Hostplant patch size-D

Egg laying type -D

Egg laying location-D

Egg laying aspect-D

Altitude-EL

Flight months-EL

Adult feeding-D

Adult roosting- D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Wingspan-Peter eeles uk butterflies site-D

Pieridae

Leptidea duponcheli

Overwintering stage-AP

Overwintering location-CL

Voltinism (subspecies duponcheli)-TK

Voltinism (also recorded as trivoltine)-LF

Pupal location-CL

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part - CL

Hostplant age- CL, https://inpn.mnhn.fr/espece/cd_nom/54378/tab/habitats

Larval environment- CL

Egg laying type- CL

Egg laying location- CL

Altitude (for nominotypical subspecies 1-1200, for lorkovici up to 2400-TK

Flight months-TK

Adult feeding (not specific species)- CL

Adult roosting- CL

Mate location type- CL

Mate locating location- CL

Basking type- CL (photos)

Basking site- CL

Leptidea sinapis

Overwintering-B

Overwintering stage confirmed-AP

Overwintering site-D

Voltinism-TK

Forewing length-AP

Wingspan-TK

Pupal site-D

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-D

Larval environment-D

Egg laying type (photo)-B

Egg laying location-LF

Egg laying aspect-D

Altitude (0-2000 in Europe, up to 2400 in turkey (not coded))-TK

Flight months-TK

Adult feeding-Tim Shreeve

Adult feeding (mineral)-GBB

Adult roosting- Tim Shreeve/Roger Dennis

Mate location type-Dennis

Mate location site-D

Basking method-D

Basking site-D

Leptidea reali

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location- http://www.habitas.org.uk/priority/species.asp?item=430857

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant age- http://www.habitas.org.uk/priority/species.asp?item=430857

Larval environment- http://www.habitas.org.uk/priority/species.asp?item=430857

Egg laying type- http://www.habitas.org.uk/priority/species.asp?item=430857

Egg laying location- http://www.habitas.org.uk/priority/species.asp?item=430857

Altitude-TK

Flight months-TK

Adult feeding- http://www.habitas.org.uk/priority/species.asp?item=430857

Adult roosting- http://www.habitas.org.uk/priority/species.asp?item=430857

Mate location type- http://www.habitas.org.uk/priority/species.asp?item=430857

Mate locating location- http://www.habitas.org.uk/priority/species.asp?item=430857

Basking type- http://www.habitas.org.uk/priority/species.asp?item=430857

Basking site- http://www.habitas.org.uk/priority/species.asp?item=430857

Leptidea morsei

Overwintering stage-AP

Overwintering location-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Voltinism-TK

Pupal location-Gascoigne-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-Gascoigne-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional

observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Hostplant age-Gascoigne-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Larval environment-Gascoigne-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Egg laying type-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Egg laying location-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Altitude-TK

Flight months-TK

Adult feeding-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Adult feeding (mineral)-BK

Adult roosting-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Mate locating type –BK

Mate locating location-. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae)

Basking site-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Basking type-Pees, M., Trew, D., Pateman, J. and Verovnik, R., 2008. The distribution, life cycle, ecology and present status of Leptidea morsei (Fenton 1882) in Slovenia with additional observations from Romania (Lepidoptera: Pieridae). Nachrichten des entomologischen Vereins Apollo, Neue Folge, 29, pp.113-121.

Aporia crateagi

Overwintering stage-B

Overwintering stage confirmed-AP

Pupal location-CL

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family (only genera given)-TK

Hostplant specificity-TK

Hostplant phenology (may be inaccurate as TK only gives genera)-FE

Hostplant growth (hostplant type) (may be inaccurate as TK only gives genera –FE

Hostplant part- Tim Shreeve (personal communication)

Hostplant age- Tim Shreeve (personal communication)

Egg laying type (photo)-CL

Egg laying location-Tim Shreeve (personal communication)

Egg laying aspect- Tim Shreeve (personal communication)

Altitude-TK

Flight months-TK

Adult feeding(herbs-not specific species)-B

Adult feeding (grass and mineral)-CL

Adult feeding (honeydew)-BK

Mate locating type BK

Adult roosting-HK

Adult roosting (communal)- BK

Basking type- Tim Shreeve (personal communication)

Basking site- Tim Shreeve (personal communication)

Pieris krueperi

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2014. Pieris krueperi. The IUCN Red List of Threatened Species 2014: e.T62162A62153574. Downloaded on 15 November 2019.

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-IUCN

Hostplant age-PYR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-IUCN

Altitude (0-2000 in Europe, up to 2500 in turkey (not coded))—TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Pieris rapae

Overwintering stage-B

Overwintering stage confirmed-AP

Overwintering site-D

Overwintering location (short sward)-GBB

Voltinism-TK

Forewing length-AP

Wingspan-TK

Pupal site-D

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (TK only gives hostplants to family (!) so this is very inexact)-FE

Hostplant growth (hostplant type) (TK only gives hostplants to family (!) so this is very inexact)-FE

Hostplant part-CL

Larval environment-D

Egg laying type (photo)-B

Egg laying location-D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Adult feeding- Tim Shreeve/Roger Dennis

Adult roosting- Tim Shreeve/Roger Dennis

Mate location type-Dennis

Mate location site-D

Basking method-D

Basking site-D

Pieris mannii

Overwintering stage-AP

Overwintering stage confirmed-Settele

Overwintering location-GBB

Voltinism-TK

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant age-PYR

Larval environment-PYR

Egg laying type (photo)-PYR

Egg location-PYR

Egg laying aspect-PYR

Altitude (0-2000 for nominotypical subspecies)-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Pieris ergane

Overwintering stage-AP

Overwintering location (ground)-PYR

Overwintering location (sward)-http://www.leps.it/indexjs.htm?SpeciesPages/ArtogErga.htm

Voltinism-TK

Pupal location-PYR

Pupal location (field layer)-http://www.leps.it/indexjs.htm?SpeciesPages/ArtogErga.htm

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant age-PYR

Larval environment-http://www.leps.it/indexjs.htm?SpeciesPages/ArtogErga.htm

Egg laying type (photo)-PYR

Egg laying location-PYR

Altitude(0-2200,for nominotypical subspecies)-TK

Flight months-TK

Adult feeding (photos)-PYR

Adult roosting-PYR +http://www.leps.it/indexjs.htm?SpeciesPages/ArtogErga.htm

Basking type-http://www.leps.it/indexjs.htm?SpeciesPages/ArtogErga.htm

Basking site-http://www.leps.it/indexjs.htm?SpeciesPages/ArtogErga.htm

Pieris napi

Overwintering stage-B

Overwintering stage confirmed-AP

Overwintering site-D

Overwintering location (surface)-GBB

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Pupal site-D

Hostplant family-TK

Hostplant specificity-TK

Hostplant part-D

Larval environment-D

Egg laying type (photo)-B

Egg laying location-D

Egg laying aspect-D

Altitude (there are a variety of different figures for different subspecies, the southern European subspecies 'meridionalis, has the largest altitudinal range (0-2500)) –TK

Flight months-TK

Adult feeding(not specific species)-B

Adult roosting- D

Mate location type-D

Mate location site-D

Basking method-D

Basking site-D

Pieris bryoniae

Overwintering stage-AP

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Hostplant age-PYR

Larval environment-PYR

Egg laying type (photos)-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate locating type-PYR

Mate locating location-PYR

Basking site-PYR

Basking site-PYR

Pieris balcana

Voltinism (multivoltine)-TK

Voltinism (bivoltine-trivoltine)- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. Pieris balcana. The IUCN Red List of Threatened Species 2010: e.T173313A6989024. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173313A6989024.en. Downloaded on 15 November 2019.

Wingspan-TK

Hostplant family ('same as P. napi)-TK

Hostplant specificity-TK

Hostplant phenology (TK says hostplants the same as P. napi)-FE

Hostplant growth (hostplant type) (TK says hostplants the same as P. napi)-FE

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Pieris segonzaci

Overwintering stage-PYR

Voltinism ('univoltine and probably bivoltine')-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Egg laying location- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. *Pieris segonzaci*. *The IUCN Red List of Threatened Species* 2015: e.T62148791A62153598. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148791A62153598.en. Downloaded on 15 November 2019.

Altitude-TK

Flight months-TK

Pieris brassicae

Overwintering stage-B

Overwintering stage confirmed-AP

Overwintering site-D

Overwintering location (surface)-GBB

Voltinism-TK

Forewing length-AP

Wingspan-TK

Pupal site-D

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (only given to genera by TK so may be inaccurate)-FE

Hostplant growth (hostplant type) (only given to genera by TK so may be inaccurate) -FE

Hostplant part-CL

Larval environment-D

Egg laying type (photo)-B

Egg laying location-D

Egg laying aspect-D

Altitude (0-2500, for nominotypical subspecies, the island endemic subspecies have smaller ranges)-TK

Flight months-TK

Adult feeding (not specific species)-B

Adult feeding (hostplant coincidence)-Tim Shreeve

Adult roosting- D

Mate location type-D

Mate location site-D

Basking method-D

Basking site-D

Pieris cheiranthi

Overwintering stage-WIEMERS, M., The butterflies of the Canary Islands A survey on their distribution, biology and ecology

Overwintering location-Tim Shreeve (personal communication)

Voltinism-TK

Pupal location- Tim Shreeve (personal communication

Wingspan-TK

Hostplant family -TK

Hostplant specificity-TK

Hostplant phenology (may be incomplete as cannot find the correct crambe species in FE)-FE

Hostplant growth (hostplant type) (may be incomplete as cannot find the correct crambe species in FE

Hostplant part-PYR

Hostplant age-PYR

Larval environment-PYR

Egg laying type-WIEMERS, M., The butterflies of the Canary Islands A survey on their distribution, biology and ecology.

Egg laying environment-PYR

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting- Tim Shreeve (personal communication

Mate location type- Tim Shreeve (personal communication

Mate locating location- Tim Shreeve (personal communication

Basking type-PYR

Basking site-PYR

Euchloe simplonia

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Euchloe simplonia*. *The IUCN Red List of Threatened Species* 2010: e.T173301A6987466. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173301A6987466.en. Downloaded on 15 November 2019.

Overwintering stage (confirmed)-AP

Voltinism (univoltine)-TK

Voltinism (sometimes biennial)-IUCN

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Hostplant age-MR

Larval environment(field layer)-PYR

Larval environment(ground layer)-MR

Egg laying type (photo)-MR

Egg laying location-MR

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Euchloe ausonia

Overwintering stage-AP

Overwintering location-CL

Pupal location-CL

Voltinism (for subspecies ausonia and melanochloros)-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Hostplant age-PYR

Larval environment-PYR

Egg laying type-CL

Egg laying location-CL

Altitude (0-1900 in Greece is the highest range in mainland Europe (for subspecies 'taurica') higher values in Algeria not coded)-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate locating type-CL

Mate locating type (hilltop)-CL

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Euchloe insularis

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. *Euchloe insularis*. *The IUCN Red List of Threatened Species* 2015: e.T173208A64825899. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173208A64825899.en. Downloaded on 15 November 2019.

Overwintering location-PYR

Voltinism (bivoltine-TK

Voltinism (second generation only partial)-IUCN

Pupal location-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Hostplant age-PYR

Larval environmemt-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding-PYR

Adult roosting-PYR

Mate locating type-PYR

Mate locating location-PYR

Basking site-PYR

Basking site-PYR

Euchloe crameri

Overwintering stage-AP

Overwintering location-GBB

Voltinism (for subspecies crameri)-TK

Voltinism (bivoltine)-LF (conflict here with TK)

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant age-PYR

Larval environment-PYR

Egg laying type (photo)-PYR

Egg laying location-PYR

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate locating type-PYR

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Euchloe tagis

Overwintering stage-AP

Overwintering location-PUR

Voltinism-TK

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant age-PYR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude Altitude (0-1600 for nomenotypical subspecies is the highest range in mainland Europe (for subspecies 'taurica') higher values in Algeria not coded)-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate locating type-PYR

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Euchloe charlonia

Overwintering stage-BACK, W., Die Präimaginalstadien von Euchloe charlonia (Do nzel, 1842) im Vergleich zu Euchloe penia (Freyer, 1852) und Euchloe transcaspica ssp. amseli (Gross & Ebert, 1975).

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Plant age-MR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude (combination of various locations in north africa)-TK

Flight months-TK

Adult feeding (photos)-MR

Roosting location-MR

Mate locating type-MR

Mate locating location-MR

Basking type-MR

Basking site-MR

Euchloe bazae

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. *Euchloe bazae*. *The IUCN Red List of Threatened Species* 2015: e.T173241A64824740. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173241A64824740.en. Downloaded on 15 November 2019.

Voltinism (bivoltine)-TK

Overwintering location-Munguira, ML, Olivares, J, Castro, S, Barea-Azcón, JM, Romo, H, Miteva, S. 2015. Species Recovery Plan for the Spanish Greenish Black-tip (Euchloe bazae). Butterfly Conservation Europe.

Voltinism (univoltine sometimes with partial second gen.)-IUCN

Pupal location-Munguira, ML, Olivares, J, Castro, S, Barea-Azcón, JM, Romo, H, Miteva, S. 2015. Species Recovery Plan for the Spanish Greenish Black-tip (Euchloe bazae). Butterfly Conservation Europe.

Forewing length (male min, max and average)-GBB

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant part (leaf)-Munguira, ML, Olivares, J, Castro, S, Barea-Azcón, JM, Romo, H, Miteva, S. 2015. Species Recovery Plan for the Spanish Greenish Black-tip (Euchloe bazae). Butterfly Conservation Europe.

HostHostplant age-Munguira, ML, Olivares, J, Castro, S, Barea-Azcón, JM, Romo, H, Miteva, S. 2015. Species Recovery Plan for the Spanish Greenish Black-tip (Euchloe bazae). Butterfly Conservation Europe.

Larval environment-Munguira, ML, Olivares, J, Castro, S, Barea-Azcón, JM, Romo, H, Miteva, S. 2015. Species Recovery Plan for the Spanish Greenish Black-tip (Euchloe bazae). Butterfly Conservation Europe.

Egg laying type-Munguira, ML, Olivares, J, Castro, S, Barea-Azcón, JM, Romo, H, Miteva, S. 2015. Species Recovery Plan for the Spanish Greenish Black-tip (Euchloe bazae). Butterfly Conservation Europe.

Egg laying location-Munguira, ML, Olivares, J, Castro, S, Barea-Azcón, JM, Romo, H, Miteva, S. 2015. Species Recovery Plan for the Spanish Greenish Black-tip (Euchloe bazae). Butterfly Conservation Europe.

Altitude-TK

Flight months-TK

Adult feeding-GBF

Mate locating type-http://www.european-butterflies.org.uk/downloads/EIG13Supplement.pdf

Mate locating location-http://www.european-butterflies.org.uk/downloads/EIG13Supplement.pdf

Basking site-http://www.european-butterflies.org.uk/downloads/EIG13Supplement.pdf

Basking site-http://www.european-butterflies.org.uk/downloads/EIG13Supplement.pdf

Euchloe penia

Overwintering stage-PYR

Overwintering locationPupal location-http://www.lepiforum.de/lepiwiki.pl?Euchloe_Penia

Voltinism ('voltinism uncertain')-TK

Pupal location-http://www.lepiforum.de/lepiwiki.pl?Euchloe_Penia

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Larval environment-PYR

Egg laying type (photo)-PYR

Egg laying location-PYR

Altitude (0-2100 in Balkans, higher in turkey and lebanon)-TK

Flight months-TK

Adult feeding-http://www.lepiforum.de/lepiwiki.pl?Euchloe_Penia

Mate locating type-http://www.lepiforum.de/lepiwiki.pl?Euchloe_Penia

Mate locating location-http://www.lepiforum.de/lepiwiki.pl?Euchloe_Penia

Euchloe belemia

Overwintering stage- Zalat, S. (2007). Butterflies of Egypt: atlas, Red Data listing & conservation. Arab Republic of Egypt. Quoted in: Dardona, Z.W., Dardona, A.W. and Albayoumi, M.A., 2015. Diversity and Ecology of Butterflies and Moths in Wadi Gaza, Gaza strip, Palestine. International Journal of Scientific and Research Publications, p.707.

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant age-PYR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding-GBF

Adult roosting-PYR

Mate locating location-PYR

Mate locating type-PYR

Basking type-PYR

Basking site-PYR

Euchloe grancanariensis

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Euchloe hesperidum

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Euchloe eversi

Overwintering stage-WIEMERS, M., The butterflies of the Canary Islands A survey on their distribution, biology and ecology.

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Egg laying type (photos)-MR

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Euchloe falloui

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (may be inaccurate due to missing species records from FE)-FE

Hostplant growth (hostplant type) may be inaccurate due to missing species records from FE)-FE

Altitude-TK

Flight months-TK

Anthocharis gruneri

Overwintering stage-CL

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Egg laying type-PYR

Egg laying location-PYR

Altitude (for Greece, largest range)-TK

Flight months-TK

Adult feeding-PYR

Anthocharis cardamines

Overwintering stage-B

Overwintering stage confirmed-AP

Overwintering site-D

Voltinism-TK

Pupal location(photo)-CL

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (flowers+bud)-GBB

Hostplant part (leaf) (photo)-LF

Larval environment-D

Egg laying type (photo)-B

Egg laying location-CL

Egg laying aspect-D

Altitude (nominotypical subspecies)-TK

Flight months-TK

Adult feeding- D

Adult roosting- D

Mate locating type-CL

Mate location type-Dennis

Mate location site-D

Basking method-D

Basking site-D

Anthocharis damone

Overwintering stage-CL

Overwintering location-CL

Pupal location-CL

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Egg laying type-CL

Egg laying location-CL

Altitude(0-1300nominotypical subspecies-higher in Turkey (not coded))-TK

Flight months-TK

Adult feeding (photos)-MR

Mate locating type-CL

Adult feeding (mineral)-GBB

Anthocharis belia

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (based only on B. lyrata, could not find information on B.raphanifolia)-FE

Hostplant growth (hostplant type) (based only on B. lyrata, could not find information on B.raphanifolia -FE

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Anthocharis euphenoides

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Anthocharis euphenoides*. *The IUCN Red List of Threatened Species* 2010: e.T173276A6983854. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173276A6983854.en. Downloaded on 15 November 2019.

Overwintering stage confirmed-AP

Overwintering location-GBB

Forewing length-AP

Voltinism-TK

Pupal location (photos)-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Plant age-PYR

Larval environment-PYR

Egg laying type (photo)-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding (photo)-PYR

Mate locating type-PYR

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Pontia daplidice

Overwintering stage-B

Overwintering stage confirmed-AP

Overwintering location-GBB

Pupal environment-HK

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant phenology (TK only gives hostplant info to genus level so may be innacurate)-FE

Hostplant growth (hostplant type) (TK only gives hostplant info to genus level so may be inaccurate)--FE

Hostplant specificity-TK

Hostplant part-PYR

Hostplant age-PYR

Larval environment-PYR

Egg laying type (photo)-B

Egg laying location-HK

Altitude-TK

Flight months-TK

Adult feeding(not specific species)-B

Mate locating type-MR

Mate locating location-MR

Basking type-MR

Basking site-MR

Pontia edusa

Overwintering stage-AP

Overwintering stage confirmed-Settele

voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (TK only gives hostplant info to genus level so may be inaccurate)-FE

Hostplant growth (hostplant type) (TK only gives hostplant info to genus level so may be inaccurate)-FE

Hostplant part-PYR

Larval enviroment-PYR

Egg laying type-CL

Egg laying location-CL

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Basking type-MR

Basking site-MR

Pontia chloridice

Overwintering stage-CL

Overwintering location-CL

Pupal location-CL

Voltinism-TK

Voltinism (bivoltine)-LF

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant age-Franeta, F., Kogovšek, N. and Verovnik, R., 2012. On the presence of Pontia chloridice (Lepidoptera: Pieridae) in the Republic of Macedonia. Phegea, 40(1b), pp.17-20.

Larval environment-Franeta, F., Kogovšek, N. and Verovnik, R., 2012. On the presence of Pontia chloridice (Lepidoptera: Pieridae) in the Republic of Macedonia. Phegea, 40(1b), pp.17-20.

Egg laying type-CL

Egg laying location-CL

Altitude-TK

Flight months-TK

Mate locating type-CL

Mate locating location-Franeta, F., Kogovšek, N. and Verovnik, R., 2012. On the presence of Pontia chloridice (Lepidoptera: Pieridae) in the Republic of Macedonia. Phegea, 40(1b), pp.17-20.

Basking site-Franeta, F., Kogovšek, N. and Verovnik, R., 2012. On the presence of Pontia chloridice (Lepidoptera: Pieridae) in the Republic of Macedonia. Phegea, 40(1b), pp.17-20.

Pontia callidice

Overwintering stage-AP

Overwintering location-CL

Pupal location-CL

Voltinism-TK

Voltinism (partial second brood)-LF

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (TK only gives hostplant info to genus level so may be inaccurate -FE

Hostplant growth (hostplant type) (TK only gives hostplant info to genus level so may be inaccurate -FE

Larval enviroment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude(0-3400 for nominotypical subspecies-higher in Russia (not coded))—TK

Flight months-TK

Adult feeding (photo)-MR

Pontia glauconome

Overwintering stage-Vieira, V., 2008. Lepidopteran fauna from the Sal Island, Cape Verde (Insecta: Lepidoptera). SHILAP Revista de lepidopterología, 36(142).

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Zegris eupheme

Overwintering stage-CL

Overwintering location-CL

Pupal location-CL

Voltinism-TK

Forewing length (male min and average)-GB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family (only for meridonalis subspecies)-TK

Hostplant specificity (only for meridonalis subspecies)-TK

Hostplant phenology (only for meridonalis subspecies)-FE

Hostplant growth (hostplant type) (only for meridonalis subspecies)-FE

Hostplant part-GBB

Hostplant age-Courtney, S., 1982. Notes on the biology of Zegris eupheme(Pieridae). Journal of the Lepidopterists Society, 36(2), pp.132-135.

Latval environment-Courtney, S., 1982. Notes on the biology of Zegris eupheme(Pieridae). Journal of the Lepidopterists Society, 36(2), pp.132-135.

Egg laying type-CL

Egg laying location-CL

Altitude (500-1400 only for Spanish subspecies 'meridionalis' higher for other values outside Europe)-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-Courtney, S., 1982. Notes on the biology of Zegris eupheme(Pieridae). Journal of the Lepidopterists Society, 36(2), pp.132-135.

Mate locating type-Courtney, S., 1982. Notes on the biology of Zegris eupheme(Pieridae). Journal of the Lepidopterists Society, 36(2), pp.132-135.

Mate locating location-Courtney, S., 1982. Notes on the biology of Zegris eupheme(Pieridae). Journal of the Lepidopterists Society, 36(2), pp.132-135.

Basking type- Tim Shreeve (personal communication)

Basking site- Tim Shreeve (personal communication)

Colotis evagore

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2014. *Colotis evagore*. *The IUCN Red List of Threatened Species* 2014: e.T174306A53710808. Downloaded on 15 November 2019.

Overwintering location (just where the larvae is throughout)-PYR

Voltinism-TK

Pupal location-PYR

Altitude (0-400 only for Spanish subspecies 'meridionalis' higher for other values outside Europe)-TK

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Hostplant age-PYR

Larval environment-PYR

Egg laying type (photo)-PYR

Egg laying site-IUCN

Flight months-TK

Adult feeding (photos)-MR

Basking type-MR

Basking site-MR

Colias phicomone

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Colias phicomone*. *The IUCN Red List*

of Threatened Species 2010: e.T173263A6982030. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173263A6982030.en. Downloaded on 15 November 2019.

Overwintering stage confirmed-AP

Voltinism (univoltine)-TK

Voltinism (sometimes a partial second generation)-IUCN

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Hostplant age-PYR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Basking type-MR

Basking site-MR

Colias tyche

Overwintering stage-HK

Overwintering location-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Voltinism-TK

-Pupal environment-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (for subspecies'werlandi' only, also includes 'vaccinium spp. Without specifying so may be inaccurate)-FE

Hostplant growth (hostplant type) (for subspecies'werlandi' only, also includes 'vaccinium spp. Without specifying so may be inaccurate)-FE

Hostplant part--http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Hostplant age-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Larval environment--http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Egg laying type-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Egg laying location-HK

Altitude (nominotypical subspecies-higher in Russia (not coded))-TK

Flight months-TK

Adult feeding (photo)-HK

Adult roosting-HK

Mate locating type-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Mate locating location-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Basking type-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Basking site-http://www.luontoportti.com/suomi/en/perhoset/pale-arctic-clouded-yellow

Colias hecla

Overwintering stage-HK

Overwintering location-HK

Pupal location-HK

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology, also includes 'vaccinium spp. Without specifying so may be inaccurate -FE

Hostplant growth (hostplant type), also includes 'vaccinium spp. Without specifying so may be inaccurate -FE

Hostplant part -http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/hecla-sulphur/?id=1370403265644

HostHostplant age-http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/hecla-sulphur/?id=1370403265644

Larval environment -http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/hecla-sulphur/?id=1370403265644
Altitude-TK

Flight months-TK

Egg laying type-HK

Egg laying location-HK

Adult feeding- http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/hecla-sulphur/?id=1370403265644
Adult roosting-HK

Mate locating type-HK

Mate locating location-http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/hecla-sulphur/?id=1370403265644

Basking type-http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/hecla-sulphur/?id=1370403265644

Basking site- http://www.cbif.gc.ca/eng/species-bank/butterflies-of-canada/hecla-sulphur/?id=1370403265644
Colias palaeno

Overwintering egg and larvae-HK

Overwintering (larvae)-B

Overwintering stage confirmed-AP

Overwintering location- (inferred by TS from MR)

Pupal location-HK

Voltinism-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Forewing length-AP

Wingspan-TK

Hostplant part- Tim Shreeve (personal communication

Hostplant age- Tim Shreeve (personal communication

Larval environment- Tim Shreeve (personal communication

Egg laying type (photo)-B

Egg laying location-HK

Altitude(0-2500 in alps, only up to 500m in Scandinavia)-TK

Flight months- Tim Shreeve (personal communication

Adult feeding(not specific species)-B

Adult roosting- Tim Shreeve (personal communication

Mate locating type-HK

Mate locating location- Tim Shreeve (personal communication

Basking type-MR

Basking site-MR

Colias chrysotheme

Overwintering stage-ICUN

Overwintering location-www.lepidoptera.sk/colias_chrysotheme

Voltinism-TK

Pupal location-www.lepidoptera.sk/colias_chrysotheme

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-www.lepidoptera.sk/colias_chrysotheme

HostHostplant age-www.lepidoptera.sk/colias_chrysotheme

Larval environment-www.lepidoptera.sk/colias_chrysotheme

Egg laying location-CL

Egg laying type-CL

Altitude-TK

Flight months-TK

Adult feeding-www.lepidoptera.sk/colias_chrysotheme

Mate locating type-www.lepidoptera.sk/colias_chrysotheme

Mate locating location-www.lepidoptera.sk/colias_chrysotheme

Basking location-www.lepidoptera.sk/colias_chrysotheme

Basking type-www.lepidoptera.sk/colias_chrysotheme

Colias erate

Overwintering stage-CL

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (hostplants only given to genus level in TK so may be imprecise)-FE

Hostplant growth (hostplant type) hostplants only given to genus level in TK so may be imprecise)--FE

Hostplant part-CL

Hostplant age-CL

Egg laying type-CL

Egg laying location-CL

Altitude-TK

Flight months-TK

Colias croceus

Overwintering stage (caterpillar)-B

Overwintering stage (caterpillar or pupa)-CL

Overwintering location-GBB

Voltinism-TK

Pupal location-D

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology hostplants only given to genus level in TK so may be imprecise)-FE

Hostplant growth (hostplant type), hostplants only given to genus level in TK so may be imprecise)-FE

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type (photo)-B

Egg laying type confirmed-CL

Egg laying location-CL

Egg laying aspect-D

Altitude-TK

Flight months-TK

Adult feeding(not specific species)-B

Adult feeding (mineral)-GBF

Adult roosting-D

Mate location type-D

Mate location site-D

Basking method-D

Basking site-D

Colias hyale

Overwintering stage (caterpillar)-B

Overwintering stage(caterpillar and pupae)-CL

Overwintering location-PYR

Pupal location-CL

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Hostplant age-PYR

Larval environment-PYR

Egg laying type (photo)-B

Egg laying type cofirmed-CL

Egg laying location-CL

Altitude-TK

Flight months-TK

Adult feeding(not specific species)-B

Adult roosting-PYR

Mate location strategy-HK

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Colias alfacrariensis

Overwintering stage-B

Overwintering stage confirmed-AP

Overwintering location-GBB

Voltinism-TK

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-CL

Hostplant age-CL

Larval environment-PYR

Egg laying type (photo)-B

Egg laying type (confirmed)- CL

Egg laying location- CL

Altitude-TK

Flight months-TK

Adult feeding(confirmed as using hostplant)-B

Mate locating type-MR

Mate locating location-MR

Basking type-MR

Basking site-MR

Colias caucasia

Overwintering stage- SCHAWERDA, K., 1922: Versammlungen der Sektion für Lepidopterologie am 4. März 1921, V. Verhandlungen der kaiserlich-königlichen Zoologisch-botanischen Gesellschaft in Wien, 71, (145–170). Cited in: Tvrtković, N., Mihoci, I. and Šašić, M., 2011. Colias caucasica balcanica Rebel, 1901 (Pieridae) in Croatia–the most western distribution point. Natura Croatica: Periodicum Musei Historiae Naturalis Croatici, 20(2), pp.375-385.

Overwintering stage-http://www.schmetterling-raupe.de/art/caucasica.htm-

Voltinism-TK

Pupal location-http://www.schmetterling-raupe.de/art/caucasica.htm

Wingspan-TK

Hostplant family-TK

Hostplant specificity(only for subspecies balcanica if nominotypical subspecies included it would be a '3')—TK

Hostplant phenology (only for balcanica)-FE

Hostplant growth (hostplant type) (only for balcanica)-FE

Hostplant part-http://www.schmetterling-raupe.de/art/caucasica.htm

Hostplant growth-http://www.schmetterling-raupe.de/art/caucasica.htm

Egg laying type-http://www.schmetterling-raupe.de/art/caucasica.htm

Egg laying location-http://www.schmetterling-raupe.de/art/caucasica.htm

Altitude (nominotypical subspecies has the widest range (600-2600) but note coded, instead coded subspecies bulcanica (900-2300)-TK

Flight months-TK

Mate locating type-Franeta, F. and Đurić, M., 2011. On the distribution of Colias caucasica balcanica Rebel, 1901, with two new records for Serbia (Lepidoptera: Pieridae). Nachrichten Des Entomologischen Vereins Apollo, 32(1/2), pp.31-37.

Mate locating location-Franeta, F. and Đurić, M., 2011. On the distribution of Colias caucasica balcanica Rebel, 1901, with two new records for Serbia (Lepidoptera: Pieridae). Nachrichten Des Entomologischen Vereins Apollo, 32(1/2), pp.31-37.

Adult feeding (photos)-MR

Mate locating type-http://www.schmetterling-raupe.de/art/caucasica.htm

Mate locating location-http://www.schmetterling-raupe.de/art/caucasica.htm

Basking type-http://www.schmetterling-raupe.de/art/caucasica.htm

Basking site-http://www.schmetterling-raupe.de/art/caucasica.htm

Colias aurirna

Overwintering stage- CL

Pupal location- CL

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Hosplant age-PYR

Larval enviromnet-PYR

Egg laying type (photo)- CL

Egg laying location- CL

Altitude (450-2400 in Greece, higher in turkey and Lebanon(not coded))-TK

Flight months-TK

Adult feeding- CL

Mate locating type- CL

Mate locating location (photos)-MR

Basking type-MR

Basking site-MRpho

Colias mymidone

Overwintering-B

Overwintering stage confirmed-AP

Overwintering location-http://eol.org/pages/174689/overview

Pupal location-Szentirmai, I., Mesterházy, A., Varga, I., Schubert, Z., Sándor, L.C., Ábrahám, L. and Kőrösi, Á., 2014. Habitat use and population biology of the Danube Clouded Yellow butterfly Colias myrmidone (Lepidoptera: Pieridae) in Romania. Journal of insect conservation, 18(3), pp.417-425.

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FEbazae

Larval environment-Pupal location-Szentirmai, I., Mesterházy, A., Varga, I., Schubert, Z., Sándor, L.C., Ábrahám, L. and Kőrösi, Á., 2014. Habitat use and population biology of the Danube Clouded Yellow butterfly Colias myrmidone (Lepidoptera: Pieridae) in Romania. Journal of insect conservation, 18(3), pp.417-425.

Egg laying type (photo)-B

Egg laying location-http://eol.org/pages/174689/overview

Altitude-TK

Flight months-TK

Adult feeding(not specific species)-B

Mate locating type-MR

Mate locating location-MR

Basking type-MR

Basking site-MR

Gonepteryx cleopatra

Overwintering stage -AP

Overwintering location-GBB

Voltinism-TK

Voltinism (univoltine, and bivoltine)-LF

Pupal location (photos)-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment (photos)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude (450-2000 in Iberia and Italy, higher in North Africa(not coded))-TK

Flight months-TK

Adult feeding (photos)-MR

Mate locating type-MR

Mate locating location-MR

Basking type-MR

Gonepteryx cleobule

Overwintering stage-PYR

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Gonepteryx cleobule*. *The IUCN Red List of Threatened Species* 2010: e.T173223A6976222. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T173223A6976222.en. Downloaded on 15 November 2019.

Hostplant growth (hostplant type)-IUCN

Hostplant part-PYR

HostHostplant age-PYR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude (300-2000 combined from all records)-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate location type-PYR

Mate locating location-PYR

Basking site-PYR

Basking site-PYR

Gonepteryx maderensis

Overwintering stage-JESUS, J.G.F., The life cycle of the little known and endangered endemic Madeiran Brimstone Butterfly Gonepteryx maderensis Felder, 1862 (Pieridae).

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-IUCN

Hostplant growth (hostplant type)-IUCN

Altitude-TK

Flight months (throughout the year but usually 4-9)-TK

Gonepteryx farinosa

Overwintering stage-MR

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-PYR

Hostplant age-PYR

Larval environment-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Adult roosting-PYR

Mate location type-PYR

Mate locating location-PYR

Basking site-PYR

Basking site-PYR

Gonepteryx rhamni

Overwintering stage-B

Overwintering stage confirmed-AP

Overwintering site-D

Voltinism-TK

Forewing length-AP

Wingspan-TK

Pupal site-D

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part- CL

Larval environment-D

Egg laying type (photo)-B

Egg laying location- D

Egg laying aspect-D

Altitude (0-2000 in Europe, higher in Asia Minor and north Africa (not coded))-TK

Flight months-TK

Adult feeding(not specific species)-B

Adult roosting-D

Mate location type-D

Mate location site-D

Basking method-D

Basking site-D

Papilio Machaon

Overwintering stage-AP

Overwintering location-CRA

Overwintering location (tall sward)-GBB

Overwintering stage confirmed-B

Voltinism-TK

Pupal location-CRA

Voltinism(length unclear/possibly one extended generation or two)-AP

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-D

Hostplant age-D

Hostplant age-D

Larval environment-D

Egg laying type (photo)-B

Egg laying location-CRA

Egg laying aspect-D

Altitude (0-3000, 'more in southern mountains')-TK

Flight months (2-10 in south of range and 5-8 in north and at high elevations)-TK

Flight months (3-10)-LF

Adult feeding-B

Adult roosting-D

Mate locating type-D

Mate location site-D

Basking type-D

Basking site-D

Papilio alexanor

Overwintering stage-CRA

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Hostplant age-Bonelli, S., Barbero, F., Casacci, L.P. and Balletto, E., 2015. Habitat preferences of Papilio alexanor Esper,[1800]: implications for habitat management in the Italian Maritime Alps. Zoosystema, 37(1), pp.169-177.

Larval environment-Bonelli, S., Barbero, F., Casacci, L.P. and Balletto, E., 2015. Habitat preferences of Papilio alexanor Esper,[1800]: implications for habitat management in the Italian Maritime Alps. Zoosystema, 37(1), pp.169-177.

Egg laying location-CRA

Egg laying aspect-CRA

Altitude (0-2400)-TK

Flight months (ionly for nominotypical subspecies and greec subspecies not for other localities-Turkey etc.)-TK

Flight months confirms(TK)-LF

Adult feeding (photo)-MR

Adult roosting-Shreeve

Mate locating type-Shreeve

Mate locating location-Shreeve

Basking type-Shreeve

Basking site-Shreeve

Papilio saharae

Overwintering stage-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Overwintering location-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Voltinism-TK

Pupal environment-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (may be incomplete as could not find 'Deverra' or 'Pycnocyla' genus in Flora europea)-FE

Hostplant growth (type) (may be incomplete as could not find 'Deverra' or 'Pycnocyla' genus in Flora europea)--FE

Hostplant part-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Hostplant age-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Larval environment-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Egg laying type-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Egg laying location-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Egg laying aspect- Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Altitude(0-2000)-TK

Flight months-TK

Adult feeding (herbs only)-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Mate locating type (same as P. hospiton) -Overwintering stage-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Mate locating location-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Basking type-https://www.micheltarrier.com/micheltarrier-com/rhopalocera/papilionidae/papilio-saharae-saharae/

Basking site-https://www.micheltarrier.com/micheltarrier-com/rhopalocera/papilionidae/papilio-saharae-saharae/

Papilio hospiton

Overwintering- Fauna d'Italia (Balletto)

Overwintering location-- Fauna d'Italia (Balletto)

Generations (monovoltine)- Fauna d'Italia (Balletto)

Voltinism ('reported partial second brood in August')-TK

Voltinism (partial second brood confirmed)-EL (Europe)

Pupal location-PYR

Forewing length-LF

Wingspan-TK

Wingspan (female average)- Fauna d'Italia (Balletto)

Hostplant family-Fauna d'Italia (Balletto)

Hostplant specificity-Fauna d'Italia (Balletto)

Hostplant phenology- (Pignatti)-Flora d'Italia

Hostplant growth (type)-FE

Hostplant growth (tall herb confirmed)-Fauna d'Italia (Balletto)

Hostplant part-PYR

Hostplant age-PYR

Larval environment-PYR

Egg laying type-Luquet, G.C. and Demerges, D., 2007. Papilions de l'annexe IV de la Directive 92/43/CEE. Papilio hospiton.

Egg laying location (tall herbs)-Fauna d'Italia (Balletto)

Egg laying location (tall herbs)-Fauna d'Italia (Balletto)

Altitude (0-2000, but 'usually 500-1400'-Fauna d'Italia (Balletto)

Flight months (generally 4-7 but can be 3-8)-Fauna d'Italia (Balletto)

Mate locating type- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. *Papilio hospiton*. *The IUCN Red List of Threatened Species* 2015: e.T15993A64822977. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T15993A64822977.en. Downloaded on 15 November 2019.

Adult feeding-Fauna d'Italia (Balletto)

Mate locating type-Pittaway, A.R., Larsen, T.B., Clarke, C.A., Smith, C.R., Crnjar, R. and Clarke, F.M.M., 1994. Papilio saharae Oberthür, 1879, specifically distinct from Papilio machaon Linnaeus, 1758 (Lepidoptera: Papilionidae). Entomologist's Gazette, 45(4), pp.223-249.

Mate locating type (patrolling)-MR

Mate locating location-PYR

Basking site-PYR

Basking type-PYR

Iphiclides podalirius

Overwintering stage-AP

Overwintering location-CRA

Overwintering location (tree)-GBB

Voltinism-TK

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Hostplant age-Shreeve

Larval environment-Shreeve

Egg laying type (photo)-B

Egg laying location-CRA

Altitude (0-2000 'or more')-TK

Flight months (5-8 in north, 3-10 in centre and south)-TK

Flight months (3-9)-LF

Adult feeding-B

Adult feeding (animal)-MR

Adult roosting-Shreeve

Mate locating type-CRA

Mate locating location (hilltop)-CRA

Mate locating location (all others)-Shreeve

Basking type-Shreeve

Basking site-Shreeve

Iphiclides feisthamelii

Overwintering stage-Stefanescu, C., Pintureau, B., Tschorsnig, H.P. and Pujade-Villar, J., 2003. The parasitoid complex of the butterfly Iphiclides podalirius feisthamelii (Lepidoptera: Papilionidae) in north-east Spain. Journal of Natural History, 37(4), pp.379-396.

Overwintering location-GBB

Voltinism (multivoltine)-TK

Forewing length (male min and average)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology (TK gives the same hostplants as I. podalirus)-FE

Hostplant growth (type) (TK gives the same hostplants as I. podalirus)--FE

Larval environment (photos)-PYR

Egg laying type-Shreeve

Egg laying location-Shreeve

Altitude (0-2700)-TK

Flight months (3-10)-TK

Flight months (3-9)-LF

Adult feeding-B

Adult roosting-Shreeve

Mate locating type-Shreeve

Mate locating location-Shreeve

Basking type-Shreeve

Basking site-Shreeve

Zerynthia rumina

Overwintering stage-AP

Overwintering location-GBB

Voltinism 'partial second brood in coastal areas)-TK

Pupal location-PYR

Forewing length-AP

Wingspan-TK

Hostplant growth (type)-FE

Hostplant part (photos)-PYR

Hostplant age-PYR

Larval environment (photos)-PYR

Altitude (0-1500)-TK

Flight months(3-6 in SW and S Spain, 3-6+9-11 in Granada and Malaga, 4-6 in Cataonia, 4-6 in S France, 3-6+2-6 in Algeria –TK

Egg laying type-CRA

Egg laying location-CRA

Flight months (3-6 in Spain and France, 3-6,8-10 in Southern Spain)-LF

Adult feeding (photo)-MR

Mate locating type-MR

Mate locating location-MR

Basking site-MR

Basking site-MR

Zerynthia polyxena

Overwintering stage-AP

Overwintering location, Celik, T., 2012. Adult demography, spatial distribution and movements of Zerynthia polyxena (Lepidoptera: Papilionidae) in a dense network of permanent habitats. European Journal of Entomology, 109(2), p.217.

Pupal location, Celik, T., 2012. Adult demography, spatial distribution and movements of Zerynthia polyxena (Lepidoptera: Papilionidae) in a dense network of permanent habitats. European Journal of Entomology, 109(2), p.217.
Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-Overwintering stage-Slancarova, J., Vrba, P., Platek, M., Zapletal, M., Spitzer, L. and Konvicka, M., 2015. Co-occurrence of three Aristolochia-feeding Papilionids (Archon apollinus, Zerynthia polyxena and Zerynthia cerisy) in Greek Thrace. Journal of natural history, 49(29-30), pp.1825-1848.

Altitude (0-1700)-TK

Egg laying type- Celik, T., 2012. Adult demography, spatial distribution and movements of Zerynthia polyxena (Lepidoptera: Papilionidae) in a dense network of permanent habitats. European Journal of Entomology, 109(2), p.217.

Egg laying (aristolochia sp.)-Celik, T., 2012. Adult demography, spatial distribution and movements of Zerynthia polyxena (Lepidoptera: Papilionidae) in a dense network of permanent habitats. European Journal of Entomology, 109(2), p.217.

Flight months (4-6 in most of range, 3-6 in southern lowland)-TK

Flight months (3-6)-LF

Adult feeding-Celik, T., 2012. Adult demography, spatial distribution and movements of Zerynthia polyxena (Lepidoptera: Papilionidae) in a dense network of permanent habitats. European Journal of Entomology, 109(2), p.217.

Adult roosting-https://www.butterfliesoffrance.com/html/Zerynthia%20polyxena.htm

Mate locating type-https://www.butterfliesoffrance.com/html/Zerynthia%20polyxena.htm

Mate locating location-
https://www.butterfliesoffrance.com/html/Zerynthia%20polyxena.htm

Basking site-https://www.butterfliesoffrance.com/html/Zerynthia%20polyxena.htm

Basking type=https://www.butterfliesoffrance.com/html/Zerynthia%20polyxena.htm

Zerynthia cassandra

Overwintering stage-AP

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-Camerini, G., Groppali, R. and Minerbi, T., 2017. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, pp.1-9.

Larval environment-Camerini, G., Groppali, R. and Minerbi, T., 2017. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, pp.1-9.

Altitude (0-1700)-TK

Egg laying type-Vovlas et al. 2014 J. Insect Ecology DOI: 10.1007/s10841-014-9662-4

Egg laying location-Camerini, G., Groppali, R. and Minerbi, T., 2017. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, pp.1-9.

Flight months (variable depending on altitude but only one number given)-TK

Flight months (3-6) confirms TK although included as part of Z.polyxena-LF

Adult feeding-Camerini, G., Groppali, R. and Minerbi, T., 2017. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, pp.1-9.

mate locating type (implied)-Camerini, G., Groppali, R. and Minerbi, T., 2017. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, pp.1-9.

Mate locating location-Camerini, G., Groppali, R. and Minerbi, T., 2018. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, 22(1), pp.41-49.

Adult basking type-Camerini, G., Groppali, R. and Minerbi, T., 2017. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, pp.1-9.

Adult Basking site-Camerini, G., Groppali, R. and Minerbi, T., 2017. Observations on the ecology of the endangered butterfly Zerynthia cassandra in a protected area of Northern Italy. Journal of Insect Conservation, pp.1-9.

Zerynthia cretica

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2015. *Zerynthia cretica*. *The IUCN Red List of Threatened Species* 2015: e.T173219A64823983. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T173219A64823983.en. Downloaded on 15 November 2019.

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-PYR

HostHostplant age-PYR

Larval envrionment- PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude (0-1000)-TK

Flight months (2-6)-TK

Flight months (3-6)-LF

Adult feeding (photos)-MR

Basking type-MR

Basking site-MR

Zerynthia cerisyi

Overwintering stage-CRA

Voltinism for subspecies 'ferdinandi' –TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-T Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-Overwintering stage-Slancarova, J., Vrba, P., Platek, M., Zapletal, M., Spitzer, L. and Konvicka, M., 2015. Co-occurrence of three Aristolochia-feeding Papilionids (Archon apollinus, Zerynthia polyxena and Zerynthia cerisy) in Greek Thrace. Journal of natural history, 49(29-30), pp.1825-1848.

Egg laying type-Overwintering stage-Slancarova, J., Vrba, P., Platek, M., Zapletal, M., Spitzer, L. and Konvicka, M., 2015. Co-occurrence of three Aristolochia-feeding Papilionids (Archon apollinus, Zerynthia polyxena and Zerynthia cerisy) in Greek Thrace. Journal of natural history, 49(29-30), pp.1825-1848.

Egg laying location-CRA

Altitude (0-1200 'or more'-for subspecies) 'ferdinandi' -TK

Flight months (recorded only subsepeuces 'ferdinandi' from Greece, apparently there are records from January but I consider this to be unlikely so have excluded.-TK

Adult feeding-MR

Basking type-MR

Basking site (bare earth only)-MR

Archon apollinus

Overwintering stage-Slancarova, J., Vrba, P., Platek, M., Zapletal, M., Spitzer, L. and Konvicka, M., 2015. Co-occurrence of three Aristolochia-feeding Papilionids (Archon apollinus, Zerynthia polyxena and Zerynthia cerisy) in Greek Thrace. Journal of natural history, 49(29-30), pp.1825-1848.

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Hostplant family-TK

Wingspan-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Larval environment-Overwintering stage-Slancarova, J., Vrba, P., Platek, M., Zapletal, M., Spitzer, L. and Konvicka, M., 2015. Co-occurrence of three Aristolochia-feeding Papilionids (Archon apollinus, Zerynthia polyxena and Zerynthia cerisy) in Greek Thrace. Journal of natural history, 49(29-30), pp.1825-1848.

Egg laying type-Overwintering stage-Slancarova, J., Vrba, P., Platek, M., Zapletal, M., Spitzer, L. and Konvicka, M., 2015. Co-occurrence of three Aristolochia-feeding Papilionids (Archon apollinus, Zerynthia polyxena and Zerynthia cerisy) in Greek Thrace. Journal of natural history, 49(29-30), pp.1825-1848.

Altitude (0-900 in Greece)-TK

Flight months (3-6 most areas 2-6 in warmer areas)-TK

Flight months 3-4-LF

Adult feeding-MR

Adult roosting-MR

Basking type-MR

Basking site-MR

Parnassius Mnemosyne

Overwintering stage-AP

Overwintering stage confirmed-B

Overwintering location (inferred from stage and egg laying location)

Pupal location(on the ground under leaves)-B

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part (photos)-PYR

Larval environment (photos)-PYR

Egg laying type (photo)-B

Altitude (0-2500)-TK

Voltinism unclear but possibly univoltine-HK

Egg laying location-CRA

Flight months (4-6 in lowlands 6-8 at higher elevations)-TK

Flight months 5-7-LF

Adult feeding-B

Adult roosting-HK

Mate locating type-HK

Mate locating location-HK

Basking type-HK

Basking site-HK

Parnassius pheobus

Overwintering stage (egg)-AP

Overwintering location-PYR

Overwintering stage (egg+caterpillar)-CRA

Voltinism-TK

Pupal location-CRA

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-PYR

Hostplant age-PYR

Larval environment- Scott, J.A., 1974. Population biology and adult behavior of the circumpolar butterfly, Parnassius phoebus F.(Papilionidae). Insect Systematics & Evolution, 4(3), pp.iii-168.

Altitude (1600-2800)-TK

Egg laying type-PYR

Egg laying location-CRA

Flight months 5-9-TK

Flight months 5-8-LF

Adult feeding (photos)-MR

Adult roosting-https://www.butterfliesoffrance.com/html/Parnassius%20phoebus.htm

Mate locating type- Scott, J.A., 1974. Population biology and adult behavior of the circumpolar butterfly, Parnassius phoebus F.(Papilionidae). Insect Systematics & Evolution, 4(3), pp.iii-168.

Mate locating location- https://www.butterfliesoffrance.com/html/Parnassius%20phoebus.htm

Mate locating type (confirmed for herbs and grasses here)- Scott, J.A., 1974. Population biology and adult behavior of the circumpolar butterfly, Parnassius phoebus F.(Papilionidae). Insect Systematics & Evolution, 4(3), pp.iii-168.

Basking site-https://www.butterfliesoffrance.com/html/Parnassius%20phoebus.htm

Basking type-https://www.butterfliesoffrance.com/html/Parnassius%20phoebus.htm

Parnassius apollo

Overwintering stag (egg)-AP

Overwintering stage (egg+caterpillar)-CRA

Overwintering location-GBB

Pupal location(on the ground under litter)-B

Voltinism-TK

Forewing length-AP

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (type)-FE

Hostplant part-CRA

Hostplant age-HK

Larval environment (photos)-PYR

Egg laying type-CRA

Egg laying location-CRA

Altitude (0-3000)-TK

Flight months (5-9 but varies over range so this may not represent any actual flight length at any one location)-TK

Flight months (same as TK)-LF

Adult feeding-B

Adult roosting-HK

Mate locating type-HK

Mate locating location-HK

Basking type-HK

Basking site-HK

Hesperidae

Carcharodus lavatherae

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location (photo)-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months (max and september includes Turkish subspecies)-TK

Adult feeding (photos)-MR

Adult feeding (mineral)-https://www.butterfliesoffrance.com/html/Carcharodus%20lavatherae.htm

Mate locating type-https://www.butterfliesoffrance.com/html/Carcharodus%20lavatherae.htm

Mate locating location-https://www.butterfliesoffrance.com/html/Carcharodus%20lavatherae.htm

Basking type-MR

Basking site-MR

Carcharodus alceae

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-LTD

Hostplant specificity-LTD

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months-TK

Adult feeding-PYR

Mate locating type-BK

Basking site-MR

Basking site-MR

Carcharodus tripolinus

Voltinism-TK

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Carcharodus flocciferus

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location (photo)-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months-TK

Adult feeding- MR

Mate locating type-
*https://www.butterfliesoffrance.com/html/Carcharodus%20flocciferus.htm#12379_male_Isere_10Jul08_-_flocciferus_*

Mate locating location-
*https://www.butterfliesoffrance.com/html/Carcharodus%20flocciferus.htm#12379_male_Isere_10Jul08_-_flocciferus_*

Basking site-MR

Basking site-MR

Carcharodus stauderi

Voltinism-TK

Wingspan-TK

Hostplants family (only for north African subspecies)-TK

Hostplant specificity(only for north African subspecies)—TK

Hostplant phenology, only for north African subspecies -FE

Hostplant growth (hostplant type), only for north African subspecies -FE

Altitude-TK

Flight months-TK

Carcharodus baeticus

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location (photo)-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months-TK

Adult feeding-GBF

Basking site-MR

Basking site-MR

Carcharodus orientalis

Overwintering stage-EL T, 2003, Biologie, écologie et répartition de Carcharodus orientalis (Reverdin, 1912) en Gréce. Comparaison avec Carcharodus flocciferus (Zeller, 1847) (Lepidoptera, Hesperiidae), Linneana belgica 19:141-146

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology (only given to genus level 'Stachys sp.' in TK) -FE

Hostplant growth (hostplant type) only given to genus level 'Stachys sp.' in TK) -FE

Altitude-TK

Flight months-TK

Erynnis marloyi

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Erynnis tages

Overwintering stage-AP

Overwintering location-D

Voltinism-TK

Pupal location-D

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-HK

Hostplant age-D

Larval environment-HK

Hostplant patch size-D

Egg laying type (photo)-PYR

Egg laying location-HK

Egg laying location (confirmed)-D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Muschampia proto

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos) shrubs also likely due to shrub hostplants-PYR

Altitude-TK

Flight months-TK

Adult feeding (photo)-PYR

Adult feeding (mineral)-GBF

Basking site-MR

Basking site-MR

Muschampia mohammed

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Muschampia cribrellum

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Muschampia cribrellum*. *The IUCN Red List of Threatened Species* 2010: e.T174430A7070452. Downloaded on 15 November 2019.

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology (imprecise hostplants in TK, only to genus level, so take this determination with a pinch of salt)-FE

Hostplant growth (hostplant type), (imprecise hostplants in TK, only to genus level) -FE

Altitude-TK

Flight months-TK

Adult feeding-DINCĂ, V., KOLEV, Z. and VEROVNIK, R., 2010. The distribution, ecology and conservation status of the Spinose Skipper Muschampia cribrellum (Eversmann, 1841) at the western limit of its range in Europe (Hesperiidae). Nota lepidopterologica, 33(1), pp.39-57

Muschampia tessellum

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Pyrgus malvae

Overwintering stage-AP

Overwintering location-D

Voltinism-TK

Pupal location-D

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-HK

Hostplant age-D

Hostplant patch size-D

Egg laying type-HK

Egg laying location-HK/D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Larval environment-HKK

Adult feeding-HK

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-HK

Basking site -D

Pyrgus serratulae

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months-TK

Adult feeding (photo)-PYR

Basking type-MR

Basking site-MR

Pyrgus carlinae

Overwintering stage-AP

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Pyrgus armoricanus

Overwintering stage-AP

Overwintering location-(only given as small herbs but on hostplant- the presence of shrubby hp elsewhere in the range allows us to infer that overwintering can also take place on shrubs)-HK

Voltinism-TK

Pupal location-HK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-HK

Larval environment (only given as small herbs but on hostplant- the presence of shrubby hp elsewhere in the range allows us to infer that the larvae can also be found on shrubs)-HK

Egg laying type-HK

Egg laying location-(only given as small herbs but on hostplant- the presence of shrubby hp elsewhere in the range allows us to infer that egg laying can also take place on shrubs)-HK

Altitude-TK

Flight months-TK

Adult feeding-MR

Adult feeding (mineral)-https://www.butterfliesoffrance.com/html/Pyrgus%20armoricanus.htm

Basking type-MR

Basking site-MR

Pyrgus bellieri

Overwintering stage-AP

Voltinism-TK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photos)-MR

Adult feeding (photo)-MR

Pyrgus onopordi

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location (photo)-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months-TK

Adult feeding (PHOTO)-PYR

Adult feeding (mineral)-GBF

Mate locating type-https://www.butterfliesoffrance.com/html/Pyrgus%20onopordi.htm

Mate locating location-https://www.butterfliesoffrance.com/html/Pyrgus%20onopordi.htm

Basking type-MR

Basking site-MR

Pyrgus alveus

Overwintering stage-AP

Overwintering location (only given as small herbs but on hostplant- the presence of shrubby hp elsewhere in the range allows us to infer that overwintering can also take place on shrubs)-HK

Voltinism-TK

Pupal location-HK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying location-(only given as small herbs but on hostplant- the presence of shrubby hp elsewhere in the range allows us to infer that egg layinbgcan also take place on shrubs)-HK

Egg laying type (photo)-PYR

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Basking type-MR

Basking site-MR

Pyrgus warrenensis

Overwintering stage-AP

Voltinism-TK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Pyrgus cinarae

Overwintering stage-VILA, R., 2012. Comparative analysis and taxonomic use of the morphology of imma-ture stages and natural history traits in European species of Pyrgus Hübner (Lepidoptera: Hesperiidae, Pyrginae). Zootaxa, 3470, pp.1-71.

Voltinism-TK

Forewing length (male min and average)-GBB

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Pyrgus sidae

Overwintering stage-AP

Voltinism-TK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Altitude-TK

Hostplant specificity (not sure about Abouliton avicennae (not in FE)-TK

Hostplant phenology (not sure about Abouliton avicennae (not in FE)--FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Flight months-TK

Adult feeding (photo)-MR

Adult feeding (mineral)-GBF

Pyrgus carthami

Overwintering stage-AP

Voltinism-TK

Pupal location (photo)-PYR

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying location (photos)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months-TK

Adult feeding-DINCĂ, V., KOLEV, Z. and VEROVNIK, R., 2010. The distribution, ecology and conservation status of the Spinose Skipper Muschampia cribrellum (Eversmann, 1841) at the western limit of its range in Europe (Hesperiidae). Nota lepidopterologica, 33(1), pp.39-57

Basking type-MR

Basking site-MR

Pyrgus centaureae

Overwintering stage-VILA, R., 2012. Comparative analysis and taxonomic use of the morphology of imma-ture stages and natural history traits in European species of Pyrgus Hübner (Lepidoptera: Hesperiidae, Pyrginae). Zootaxa, 3470, pp.1-71.

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Egg laying location-HK

Altitude-TK

Flight months-TK

Adult feeding-MR

Basking type-MR

Basking site-MR

Pyrgus cacaliae

Overwintering stage-AP

Voltinism-TK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-GBB

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Pyrgus andromedae

Overwintering stage-AP

Voltinism-TK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding-HK

Spialia sertorius

Overwintering stage-AP

Overwintering location-GBB

Voltinism-TK

Pupal location (photo)-PYR

Wingspan-TK

Forewing length-AP

Hostplants family (only for nominotypical subspecies)-TK

Hostplant specificity(only for nominotypical subspecies)-TK

Hostplant phenology (only for nominotypical subspecies)-FE

Hostplant growth (hostplant type), (only for nominotypical subspecies)-FE

Hostplant part (photos)-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight months-TK

Mate locating type-BK

Mate locating location-BK

Adult feeding (photo)-MR

Basking type-MR

Basking site-MR

Spialia orbifer

Overwintering stage-AP

Voltinism-TK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Spialia doris

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Spialia phlomidis

Overwintering stage-PYR

Voltinism-TK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Altitude-TK

Flight months-TK

Heteropterus Morpheus

Overwintering stage-AP

Overwintering location-HK

Voltinism-TK

Pupal location-HK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment-HK

Egg laying location-HK

Egg laying type (photo)-PYR

Altitude-TK

Flight months-TK

Basking site-MR

Basking site-MR

Carterocephalus palaemon

Overwintering stage-AP

Overwintering location-D

Voltinism-TK

Pupal environment-D

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-D

Hostplant age-D

Hostplant patch size-D

Larval environment-HK

Egg laying type (photo)-PYR

Egg laying location-D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Adult feeding-D

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-HK

Carterocephalus silvicolus

Overwintering stage-HK

Overwintering location-HK

Overwintering location-HK

Voltinism-TK

Pupal location-HK

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photos)-PYR

Larval environment-HK

Egg laying type (photo)-PYR

Egg laying location-HK

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Basking type-MR

Basking site-MR

Thymelicus acteon

Overwintering stage-AP

Overwintering location-D

Overwintering location (short sward)-GBB

Voltinism-TK

Pupal location-D

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part-D

Hostplant age-D

Hostplant patch size-D

Larval environment-D

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-TK

Flight months (only for europe and north Africa, longer in canaries)-TK

Adult feeding (photo)-PYR

Adult roosting -D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Thymelicus Hamza

Voltinism-TK

Wingspan-TK

Altitude-TK

Flight months (only for Maghreb)-TK

Thymelicus hyrax

Voltinism-TK

Wingspan-TK

Hostplant family-LTD

Hostplant specificity-LTD

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Thymelicus lineola

Overwintering stage-AP

Overwintering location-D

Overwintering location (short sward)-GBB

Voltinism-TK

Pupal location-D

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part(photo)-PYR

Hostplant age-D

Larval environment- D

Hostplant patch size-D

Egg laying type (photo)-PYR

Egg laying location-HK

Egg laying location confirmed -D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Adult feeding-PYR

Adult feeding (mineral)-GBB

Adult roosting-HK

Adult roosting (tall herb)-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Thymelicus sylvestris

Overwintering stage-AP

Overwintering location-D

Overwintering location (short sward)-GBB

Voltinism-TK

Pupal location-D

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (leaf)-D

Hostplant part (stem)-GBB

Hostplant age-D

Hostplant patch size-D

Larval environment-HK

Egg laying type-D

Egg laying location-D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Adult feeding-D

Adult feeding (mineral)-GBB

Adult roosting (no explicit reference to communal roosting so this has been left out, but i would guess communal roosting is likely)-HK

Adult roosting (tall herb)-D

Mate locating type -D

Mate locating location-HK

Mate locating location (tall herb+physical edge+nectar)-D

Basking type-D

Basking site-HK

Hesperia comma

Overwintering stage-AP

Overwinterting location-PYR

Overwintering location confirmed-D

Voltinism-TK

Pupal location-HK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-PYR

Hostplant part-D

Hostplant age-D

Hostplant patch size-D

Larval environment-HK

Egg laying type-PYR

Egg laying location-D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Adult feeding-HK

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Ochlodes sylvanus

Overwintering stage-AP

Overwintering location-D

Voltinism-TK

Pupal location-HK

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant part-D

Hostplant age-D

Hostplant patch size-D

Hostplant growth (hostplant type)-FE

Larval environment-HK

Egg laying type-PYR

Egg laying location-D

Egg laying aspect-D

Altitude-TK

Flight months-TK

Aduult feeding-D

Adult feeding (animal)-GBF

Adult feeding (mineral)-GBF

Adult roosting-D

Mate locating type-D

Mate locating location-D

Basking type-D

Basking site-D

Gegenes pumilo

Overwintering stage-AP

Overwintering location-PYR

Voltinism-TK

Pupal environment (photo)-PYR

Forewing length (male min)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Forewing length-AP

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photo)-PYR

HostHostplant age-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying type (photo)-PYR

Altitude-TK

Flight months-TK

Adult feeding-PYR

Mate locating type-PYR

Mate locating location- PYR

Basking site-PYR

Gegenes nostrodamus

Overwintering stage-PYR

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Forewing length (male min)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology (hostplants in TK only given to genus level, so this trait may be imprecise)-FE

Hostplant growth (hostplant type), (hostplants in TK only given to genus level, so this trait may be imprecise-FE

HostHostplant age-PYR

Larval environment-PYR

HostHostplant age-PYR

Egg laying type-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding (photo)-MR

Adult feeding (mineral)-GBF

Mate locating type-PYR

Mate locating location-PYR

Basking type-PYR

Basking site-PYR

Borbo borbonica

Ovewintering stage-Sariot, M.M., 2013. Ciclo biológico, morfología de los estadios preimaginales y nuevos datos sobre la distribución de Borbo borbonica zelleri (Lederer, 1855)(Lepidoptera: Hesperiidae) en la provincia de Cádiz, España. Revista gaditana de Entomología, 4(1), pp.137-158.

Voltinism-TK

Pupal environment (photo)-PYR

Forewing length (male min)-GBB

Forewing length (male max)-GBU

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology (doesn't include Leersia hexandra as not in FE)-FE

Hostplant growth (hostplant type), (doesn't include Leersia hexandra as not in FE) -FE

Hostyplant age-PYR

Hostplant part-PYR

Egg laying type (photo)-PYR

Egg laying location-PYR

Altitude-TK

Flight months (for Spain and north Africa)-TK

P thrax

Overwintering stage-PYR

Overwintering location-PYR

Voltinism-TK

Pupal location-PYR

Wingspan-TK

Hostplants family-TK

Hostplant specificity-TK

Hostplant phenology-FE

Hostplant growth (hostplant type)-FE

Hostplant part (photo-PYR

Larval environment-PYR

Egg laying type (PHOTO)-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Adult feeding (photo)-PYR

Basking type-PYR

Aricia cramera

Overwintering stage-WIEMERS, M., The butterflies of the Canary Islands A survey on their distribution, biology and ecology.

Overwintering location-GBB

Voltinism-TK

Wingspan (given as the same as A .agestis)-TK

Ant usage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov, S. 2014. *Aricia cramera*. *The IUCN Red List of Threatened Species* 2014: e.T174274A53706874. Downloaded on 15 November 2019.

Hostplant family-TK

Hostplant specificity (would only be oligophagous in Tenerife)-TK

Hostplant phenology-GBB

Hostplant type-GBB

Hostplant part-GBB

Larval environment (photo)-PYR

Egg laying type-PYR

Egg laying location (photo)-PYR

Altitude-TK

Flight months-PYR

Adult feeding (photo)-PYR

Adult feeding (mineral)-GBF

Basking type-MR

Basking site-MR

Aricia montensis

Overwintering stage-GBB

Overwintering location-GBB

Voltinism-TK

Wingspan (given as the same as A .artaxerxes)-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Aricia montensis*. *The IUCN Red List of Threatened Species* 2010: e.T174446A7073706. Downloaded on 15 November 2019.

Altitude-TK

Flight months-TK

Adult feeding-GBF

Catopsilia florella

Overwintering stage-PYR

Voltinism-TK

Pupal environment-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part (photo)-PYR

Larval environment-PYR

Altitude-TK

Flight months-TK

Egg laying type (photos)-PYR

Egg laying location-PYR

Chilades galba

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Hipparchia maderensis

Overwintering stage-PYR

Overwintering location-PYR

Voltinism-TK

Pupal environment (photo)-PYR

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Larval environment (photo)-PYR

Altitude-TK

Flight months-TK

Plebejus dardanus

Voltinism-TK

Wingspan (same as P. pyrenaicus)-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Plebejus loewii

Voltinism-TK

Wingspan TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Adult feeding-PYR

Plebejus psyloritus

Voltinism-TK

WingspanTK

Hostplant family-TK

Hostplant specificity-TK

Egg laying location -Pamperis LN (1997) Butterflies of Greece. Bastas-Plessas, Athens [in Greek]

Altitude-TK

Altitude: 950 - 2150m in Crete -Pamperis LN (1997) Butterflies of Greece. Bastas-Plessas, Athens [in Greek]

Flight months-TK

Flight months (crete-may->june)Pamperis LN (1997) Butterflies of Greece. Bastas-Plessas, Athens [in Greek]

Plebejus pylaon

Overwintering stage-PYR

Overwintering location-CL

Voltinism-TK

Pupal environment-CL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part-CL

Larval environment (photo)-PYR

Larval enviornment (attended)-CL

Altitude-TK

Flight months-TK

Egg laying type-CL

Egg laying location-CL

Adult feeding-CL

Plebejus trappi

Overwintering stage- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Plebejus trappi*. *The IUCN Red List of Threatened Species* 2010: e.T39488A10230047. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T39488A10230047.en. Downloaded on 15 November 2019.

Voltinism-TK

Wingspan (same as Plebejus sephirus)-TK

Hostplant family-TK

Hostplant specificity-TK

Larval environment-IUCN

Egg laying location-IUCN

Altitude-TK

Flight months-TK

Polyommatus corydonius

Overwintering stage-CL

Voltinism-TK

Pupal location-CL

Wingspan -TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-TK

Flight months (only for nominotypical subspecies)-TK

Adult feeding (photos)-CL

Polyommatus damocles

Voltinism-TK

WingspanTK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months -TK

Polyommatus iphigenia

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Pseudochazara euxina

Voltinism-TK

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Pseudochazara williamsi

Overwintering stage- van Swaay, C., Wynhoff, I., Wiemers, M., Katbeh-Bader, A., Power, A., Benyamini, D., Tzirkalli, E., Balletto, E., Monteiro, E., Karaçetin, E., Franeta, F., Pe'er, G., Welch, H., Thompson, K., Pamperis, L., Dapporto, L., Šašić, M., López Munguira, M., Micevski, N., Dupont, P., Garcia-Pereira, P., Moulai, R., Caruana, R., Verovnik, R., Bonelli, S. & Beshkov,

S. 2015. *Pseudochazara williamsi*. *The IUCN Red List of Threatened Species* 2015: e.T62148586A62153134. http://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T62148586A62153134.en. Downloaded on 15 November 2019.

Voltinism-TK

Wingspan (same as for P. hippolyte)-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Adult feeding-GBF

Pyrgus cirsii

Overwintering stage (larvae)-PYR

Overwintering stage (egg)-SFR

Overwintering stage (egg)-AP

Overwintering location-PYR

Voltinism-TK

Voltinism (confirmed)-AP

Pupal location-PYR

Wingspan (same as P. carlinae)-TK

Hostplant family-TK

Hostplant specificity-TK

Hostplant part (photos)-PYR

Altitude-TK

Forewing length-TK

Hostplant age- van Swaay, C., Wynhoff, I., Verovnik, R., Wiemers, M., López Munguira, M., Maes, D., Sasic, M., Verstrael, T., Warren, M. & Settele, J. 2010. *Pyrgus cirsii*. *The IUCN Red List of Threatened Species* 2010: e.T39481A10240539. http://dx.doi.org/10.2305/IUCN.UK.2010-1.RLTS.T39481A10240539.en. Downloaded on 15 November 2019.

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location-PYR

Adult feeding (photo)-PYR

Adult feeding (mineral)-https://www.butterfliesoffrance.com/html/Pyrgus%20cirsii.htm

Basking type-MR

Basking site-MR

Pyrgus malvoides

Overwintering stage-PYR

Overwintering location-GBB

Voltinism (uni and bivoltine)-TK

Voltinism (only univoltine in alps)-AP

Pupal location-IUCN

Wingspan (same as P malvae)-TK

Hostplant family (same as P malvae)-TK

Hostplant specialism (same as P malvae)-TK

Hostplant growth-FE

Hostplant phenology-FE

Hostplant part (photo)-PYR

Larval environment (photo)-PYR

Egg laying type (photo)-PYR

Egg laying location (photos)-PYR

Altitude-TK

Flight Months-TK

Adult feeding-GBF

Satyrium ledereri

Overwintering stage-PYR

Voltinism-TK

Pupal location-CL

Wingspan-TK

Hostplant family-TK

Hostplant specialism-TK

Hostplant part-CL

Larval environment-CL

Egg laying type-CL

Egg laying location-CL

Altitude-TK

Flight months-TK

Adult feeding-CL

Spialia therapne

Voltinism-TK

Pupal environment (photo)-PYR

Wingspan (same as for S. sertorius)-PYR

Hostplant family (same as for S. sertorius)-TK

Hostplant specificity n (same as for S. sertorius)-TK

Larval environment-PYR

Egg laying type (photo)-PYR

Egg laying location-PYR

Altitude-TK

Flight months-TK

Mate locating type-PYR

Mate locating location-PYR

Thymelicus christi

Overwintering stage-PYR

Voltinism-TK

Pupal location (photo)-PYR

Wingspan (same as for T. acteon)-PYR

Hostplant part-PYR

Larval environment-PYR

Altitude-TK

Flight months-TK

Tomares callimachus

Overwintering stage-CL

Overwintering location-CL

Voltinism-TK

Pupal environment-CL

Wingspan-TK

Hostplant family-TK

Hostplant specificity-TK

Larval environment-CL

Hostplant part-CL

Egg laying type-CL

Egg laying location-CL

Altitude-TK

Flight months-TK

Mate locating type-CL

Iolana debilitata

Overwintering stage-GBB

Overwintering location-GBB

Voltinism-TK

Wingspan (same as I iolas)-TK

Hostplant family-TK

Hostplant specificity-TK

Altitude-TK

Flight months-TK

Adult feeding-GBF

Leptidea juvernica

Overwintering stage-SFR

Overwintering location-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Generations (UK)-http://www.ukbutterflies.co.uk/species.php?species=juvernica

*Pupal location-**http://www.ukbutterflies.co.uk/species.php?species=juvernica***

Wingspan-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Hostplant family-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Hostplant specificity-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Hostplant part-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Larval environment-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Egg laying type-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Egg laying location-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Egg laying aspect-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Flight months (UK)-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Adult feeding-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Adult roosting-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Mate locating type-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Basking site (photos)-http://www.ukbutterflies.co.uk/species.php?species=juvernica

Generic order of traits

Overwintering stage-

Overwintering location-

Voltinism-

Forewing length-

Wingspan-

Pupal location-

Hostplant family-

Hostplant specificity-

Hostplant phenology-FE-

Hostplant growth (type)-

Hostplant part

Hostplant age-

Larval environment-

Hostplant patch size-

Egg laying type -

Egg laying location-

Egg laying aspect-

Altitude-

Flight months

Adult feeding-

Adult roosting-

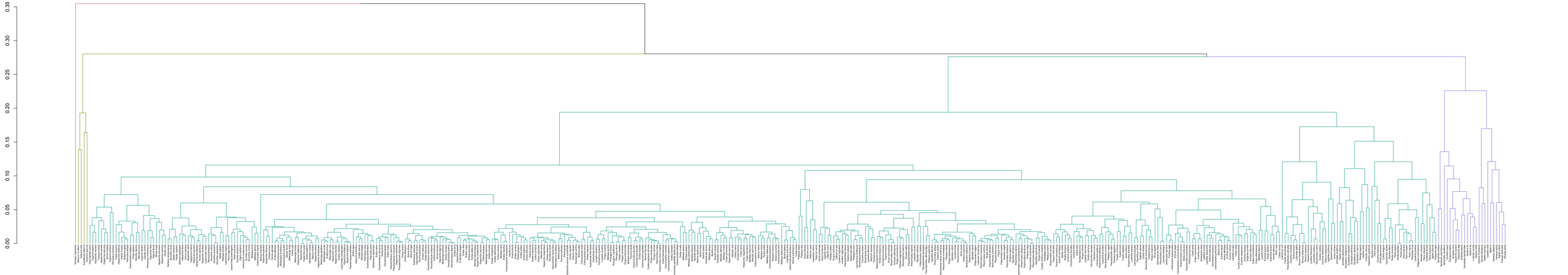
Mate locating type-

Mate locating location-

Basking type-

Basking site-

Appendix 4.1: UPGMA clustering dendrogram of all European butterfly species constructed using hierarchical clustering on the basis of ecological traits. Colours on the dendrogram indicate the optimal clustering as chosen using the 'Calinhara' function in the 'fpc' package (Hennig, 2015). Labels refer to clusters referred to in the results and discussion sections.



Appendices tables for Chapter 4.

Appendix 4.2: Traits removed from the full dataset prior to analysis. All traits on this list were removed prior to the initial imputation except the traits with between 20 and 40% missing data, which were removed prior to the second round of imputation (see methods in chapter 4 for full details).

Trait	Reason for removal
Flight months (binary)	Redundant
Flight month (range)	Redundant
Voltinism (Continuous)	Redundant
Hostplant family (Crassulaceae, Saxigragaceae)	Redundant
Hostplant specificity	Redundant
Altitude	Not a fundamental trait
Forewing length	Redundant
Wingspan (male)	Redundant
Hostplant patch size	>40% missing data
Egg laying location (light, partial shade, shade)	>40% missing data
Hostplant age	>40% missing data
Adult roosting	>40% missing data
Basking type	>40% missing data
Basking location	>40% missing data
Mate locating type	>40% missing data
Mate locating location	>40% missing data
Pupal location	>20% missing data
Hostplant part	>20% missing data
Overwintering location	>20% missing data
Hostplant type	>20% missing data
Hostplant growth form	>20% missing data
Adult feeding (hostplant coincidence)	>20% missing data
Egg laying type	>20% missing data
Egg laying location (all other sub-traits)	>20% missing data
Hostplant family (Moraceae, Santaclaceae)	Invariant

Appendix 4.2: Traits removed from the EBMS dataset. All traits on this list were removed prior to the initial imputation except the traits with between 20 and 40% missing data, which were removed prior to the second round of imputation (see methods in Chapter 4 for full details).

Trait	Reason f
Flight months (binary)	Redunda
Flight month (range)	Redunda
Voltinism (Continuous)	Redunda
Hostplant family (Crassulaceae, Saxifragaceae)	Redunda
Hostplant specificity	Redunda
Forewing length	Redunda
Wingspan (male)	Redunda
Altitude	Not a fu
Hostplant patch size	>20% mi
Hostplant age	>20% mi
Adult Roosting	>20% mi
Mate locating type	>20% mi
Mate locating location	>20% mi
Hostplant family (Moraceae, Santaclaceae, Boranginaceae, Balsaminaceae, Zygophyllaceae, Arecaceae, Saxifragaceae, Cleomaceae, Capparaceae)	Invarian

Appendix 4.4: Factor scores from a PCA of the full species dataset of European butterflies.

Trait	CS1	CS2	CS3
OWS_egg.0	0.032928	0.010934	0.053098
OWS_egg.1	-0.24333	-0.0808	-0.39238
OWS_larvae.0	-0.35632	-0.08285	-0.11306
OWS_larvae.1	0.104198	0.024228	0.033061
OWS_pupae.0	0.122438	0.070991	-0.04337
OWS_pupae.1	-0.42853	-0.24847	0.151806
OWS_adult.0	0.070284	-0.01408	0.017281
OWS_adult.1	-0.98398	0.197186	-0.24193
biennial.0	-0.02184	-0.00983	-0.00871
biennial.1	0.350881	0.15791	0.139931
univoltine.0	-0.4049	-0.31701	0.227286
univoltine.1	0.101225	0.079253	-0.05682
uni.partial.0	0.010683	0.004677	0.005007
uni.partial.1	-0.17818	-0.07801	-0.08351
bivoltine.0	0.086707	0.057384	0.003474
bivoltine.1	-0.27396	-0.18131	-0.01098
multivoltine.0	0.153297	0.0644	-0.03266
multivoltine.1	-0.60552	-0.25438	0.129007
MYR_mono.0	-0.00495	0.00718	0.006149
MYR_mono.1	0.26712	-0.3877	-0.33206
MYR_oligo.0	0.000767	0.016798	0.012737
MYR_oligo.1	-0.02455	-0.53753	-0.40758
MYR_poly.0	-0.00089	0.086871	0.084808
MYR_poly.1	0.004996	-0.48648	-0.47492
WSP_Female.average	-0.11225	0.39022	0.112799
WSP_Female.min	-0.09478	0.382453	0.11437
WSP_Female.max	-0.12483	0.389318	0.10932
WSP_Female.varience	-0.146	0.217268	0.041881

Appendix 4.4 continued

Trait	CS1	CS2	CS3
HSI	0.112154	-0.02762	0.046185
HPF_Poaceae.0	-0.10058	-0.13137	-0.1162
HPF_Poaceae.1	0.18721	0.244522	0.21628
HPF_Fabaceae.0	0.000738	0.107007	0.054439
HPF_Fabaceae.1	-0.00274	-0.39745	-0.2022
HPF_Rosaceae.0	0.00513	-0.00058	0.012052
HPF_Rosaceae.1	-0.05681	0.00643	-0.13345
HPF_Umbelliferae.0	0.007465	-0.00383	-0.00974
HPF_Umbelliferae.1	-0.60837	0.312167	0.793958
HPF_Aristolochiaeae.0	0.001126	-0.00256	-0.00503
HPF_Aristolochiaeae.1	-0.09179	0.208564	0.409944
HPF_Crassulaceae.0	0.000932	-0.0035	-0.00199
HPF_Crassulaceae.1	-0.15281	0.574455	0.326384
HPF_Saxifragaceae.0	-0.00084	-0.00135	-0.00094
HPF_Saxifragaceae.1	0.206957	0.33195	0.230591
HPF_Papaveraceae.0	-2.76E-05	-0.00109	-0.00036
HPF_Papaveraceae.1	0.013624	0.540424	0.176954
HPF_Celastraceae.0	0.000693	0.001513	0.003713
HPF_Celastraceae.1	-0.34259	-0.74759	-1.83421
HPF_Cruciferae.0	0.034519	0.01447	-0.04103
HPF_Cruciferae.1	-0.46804	-0.19619	0.556261
HPF_Cleomaceae.0	0.003838	0.002313	-0.00468
HPF_Cleomaceae.1	-0.94608	-0.5702	1.154215
HPF_Cappraceae.0	0.004403	0.002419	-0.0035
HPF_Cappraceae.1	-1.08529	-0.59635	0.863019
HPF_Tropaeolaceae.0	0.00233	0.000607	-0.00221
HPF_Tropaeolaceae.1	-1.15081	-0.29986	1.090508
HPF_Resedaceae.0	0.012669	0.00551	-0.01434
HPF_Resedaceae.1	-0.88323	-0.38413	0.99962

Appendix 4.4 continued

Trait	CS1	CS2	CS3
HPF_Ericaceae.0	-0.00021	0.001413	0.023049
HPF_Ericaceae.1	0.008254	-0.05687	-0.92774
HPF_Cistaceae.0	-0.00067	0.017047	0.017058
HPF_Cistaceae.1	0.022999	-0.5857	-0.58606
HPF_Fagaceae.0	0.000718	0.00088	0.027776
HPF_Fagaceae.1	-0.08808	-0.10796	-3.40948
HPF_Urticaceae.0	0.023229	-0.00435	0.004716
HPF_Urticaceae.1	-1.25434	0.235068	-0.25464
HPF_Polygonacea.0	0.001487	0.010944	0.001206
HPF_Polygonacea.1	-0.03942	-0.29001	-0.03195
HPF_Lamaciae.0	-0.00043	0.020117	0.005059
HPF_Lamaciae.1	0.009618	-0.45406	-0.1142
HPF_Geraniaceae.0	0.000521	0.012655	0.005779
HPF_Geraniaceae.1	-0.02529	-0.61376	-0.28028
HPF_Primulaceae.0	-0.00331	0.003656	0.000587
HPF_Primulaceae.1	0.324702	-0.35824	-0.05754
HPF_Caprifoliaceae.0	-0.00111	-0.00644	0.013953
HPF_Caprifoliaceae.1	0.060004	0.347684	-0.75345
HPF_Salicaceae.0	0.007121	-0.02502	0.029057
HPF_Salicaceae.1	-0.34536	1.213604	-1.40926
HPF_Betulaceae.0	0.00022	0.000171	0.001932
HPF_Betulaceae.1	-0.10889	-0.08449	-0.95448
HPF_Cannabaceae.0	0.004298	-0.00198	0.015954
HPF_Cannabaceae.1	-0.70493	0.325151	-2.6165
HPF_Violaceae.0	-0.00331	-0.00828	-0.00137
HPF_Violaceae.1	0.087826	0.21954	0.036413
HPF_Plantaginaceae.0	-0.0064	-0.00181	0.010338
HPF_Plantaginaceae.1	0.20468	0.057893	-0.33081
HPF_Scrophulariaceae.0	0.003627	0.001568	0.002086

Appendix 4.4 continued

Trait	CS1	CS2	CS3
HPF_Scrophulariaceae.1	-0.19586	-0.08468	-0.11266
HPF_Malvaceae.0	0.00926	0.001365	-0.00121
HPF_Malvaceae.1	-1.51856	-0.22388	0.19894
HPF_Asteraceae.0	0.006245	-0.00067	0.000355
HPF_Asteraceae.1	-0.33722	0.036354	-0.01914
HPF_Orobrancaceae.0	-0.00142	6.37E-05	0.001286
HPF_Orobrancaceae.1	0.173744	-0.00781	-0.1578
HPF_Oleaceae.0	-0.001	-0.00023	0.017612
HPF_Oleaceae.1	0.164122	0.037193	-2.88829
HPF_Gentianaceae.0	-0.00194	-6.96E-05	0.000442
HPF_Gentianaceae.1	0.318028	0.01141	-0.07246
HPF_Ulmaceae.0	0.001586	-0.00215	0.024958
HPF_Ulmaceae.1	-0.26003	0.353175	-4.09318
HPF_Rutaceae.0	0.002273	-0.00215	-0.00215
HPF_Rutaceae.1	-1.12265	1.063201	1.06435
HPF_Solanaceae.0	0.000631	-0.00017	0.011424
HPF_Solanaceae.1	-0.31173	0.083214	-5.64331
HPF_Rhamnaceae.0	0.002385	0.006611	0.014025
HPF_Rhamnaceae.1	-0.23377	-0.64792	-1.37447
HPF_Cypraceae.0	-0.00402	-0.00994	-0.0024
HPF_Cypraceae.1	0.112923	0.279487	0.067538
HPF_Juncaceae.0	-0.0008	-0.00155	-0.00142
HPF_Juncaceae.1	0.131827	0.25408	0.233027
HPF_Boraginaceae.0	0.005888	0.003262	-0.00092
HPF_Boraginaceae.1	-1.45141	-0.80416	0.225865
HPF_Apocynaceae.0	0.006269	-0.00342	-0.00418
HPF_Apocynaceae.1	-1.54531	0.843051	1.031049
HPF_Convolvulaceae.0	0.003219	-0.00023	-0.00337
HPF_Convolvulaceae.1	-0.52793	0.037026	0.552879

Appendix 4.4 continued

Trait	CS1	CS2	CS3
HPF_Balsaminaceae.0	0.004507	0.001114	-0.0007
HPF_Balsaminaceae.1	-2.22665	-0.55047	0.344278
HPF_Adoxaceae.0	-0.00044	-0.00142	0.006278
HPF_Adoxaceae.1	0.217535	0.700904	-3.10121
HPF_Plumbaginaceae.0	0.001458	0.006176	0.001509
HPF_Plumbaginaceae.1	-0.17895	-0.75816	-0.18528
HPF_Eleganaceae.0	-0.00075	0.003031	0.003267
HPF_Eleganaceae.1	0.18481	-0.74704	-0.80527
HPF_Zygophyllaceae.0	0.001878	0.002325	0.000808
HPF_Zygophyllaceae.1	-0.92771	-1.1486	-0.39906
HPF_Arecaceae.0	0.002304	0.001174	-3.92E-05
HPF_Arecaceae.1	-1.13826	-0.57985	0.019351
HPF_Lythraceae.0	0.001252	0.002541	0.001283
HPF_Lythraceae.1	-0.61824	-1.25506	-0.63403
HPF_Euphorbiaceae.0	0.001735	0.001139	-0.00102
HPF_Euphorbiaceae.1	-0.85728	-0.56286	0.503735
FLM_Average	-0.37109	-0.09687	0.051913
FLM_Min	-0.32128	-0.14602	0.059854
FLM_Max	-0.3667	-0.04246	0.038523
AFB_herb.flower.0	-0.42217	0.562531	-0.98729
AFB_herb.flower.1	0.016851	-0.02245	0.039408
AFB_grass.sedge.ergot.0	-0.00037	-0.00644	0.002792
AFB_grass.sedge.ergot.1	0.045965	0.79099	-0.34274
AFB_shrub.tree.flower.0	0.044139	-0.04607	0.053004
AFB_shrub.tree.flower1	-0.29725	0.310274	-0.35695
AFB_honeydew.0	0.019272	-0.02555	0.061707
AFB_honeydew.1	-0.36232	0.480342	-1.16009
AFB_sap.0	0.022546	-0.04353	0.0345
AFB_sap.1	-0.5089	0.982446	-0.77872

Appendix 4.4 continued

Trait	CS1	CS2	CS3
AFB_decaying.plants.0	0.02009	-0.03675	0.029622
AFB_decaying.plants.1	-0.60146	1.100214	-0.88681
AFB_animal.0	0.023023	-0.04411	0.052392
AFB_animal.1	-0.26189	0.501802	-0.59596
AFB_mineral.0	0.023823	0.005754	0.097765
AFB_mineral.1	-0.07962	-0.01923	-0.32674

Appendix 4.5: Factor scores from a PCA of the EBMS species dataset of European butterflies.

Trait	CS1	CS2	CS3
OWS_egg.0	0.024832	0.051298	0.007404
OWS_egg.1	-0.11079	-0.22887	-0.03303
OWS_larvae.0	-0.17926	-0.06964	0.231879
OWS_larvae.1	0.068678	0.026682	-0.08884
OWS_pupae.0	-0.00858	-0.00426	-0.10377
OWS_pupae.1	0.032022	0.015912	0.387401
OWS_adult.0	0.028437	-0.03202	-0.03568
OWS_adult.1	-0.40421	0.455206	0.50711
OWL_buried.0	-0.00069	0.030836	-0.00455
OWL_buried.1	0.007946	-0.35552	0.052412
OWL_surface.0	-0.04971	-0.0013	-0.01055
OWL_surface.1	0.087803	0.002298	0.018627
OWL_short.sward.0	-0.21902	-0.06989	0.048228
OWL_short.sward.1	0.10951	0.034945	-0.02411
OWL_tall.sward.0	-0.03943	-0.11875	0.001798
OWL_tall.sward.1	0.069648	0.209739	-0.00318
OWL_shrub.0	0.078565	-0.01902	-0.04722
OWL_shrub.1	-0.37371	0.090457	0.224627
OWL_tree.0	0.085512	-0.00231	-0.01068
OWL_tree.1	-0.58908	0.015887	0.073607
OWL_liana.0	0.024555	-0.02325	-0.01139
OWL_liana.1	-0.55658	0.527034	0.258204
biennial.0	-0.00231	-0.00298	0.017198
biennial.1	0.067849	0.087639	-0.50611
univoltine.0	0.101691	0.003255	0.518421
univoltine.1	-0.01476	-0.00047	-0.07525
uni.partial.0	0.000598	-0.00081	-0.0094
uni.partial.1	-0.00648	0.008735	0.101885
bivoltine.0	-0.02326	-0.03199	-0.12617

Appendix 4.5 continued

Trait	CS1	CS2	CS3
bivoltine.1	0.043696	0.06008	0.236989
multivoltine.0	-0.00191	-0.04976	-0.15201
multivoltine.1	0.006755	0.175751	0.53688
PLO_buried.0	-0.00677	0.037478	0.008013
PLO_buried.1	0.038286	-0.21198	-0.04533
PLO_groundlayer.0	-0.09667	0.091973	0.08588
PLO_groundlayer.1	0.074916	-0.07128	-0.06656
PLO_fieldlayer.0	-0.04142	-0.13663	-0.05982
PLO_fieldlayer.1	0.047697	0.15733	0.068881
PLO_shrub.layer.0	0.067497	0.003427	-0.00473
PLO_shrub.layer.1	-0.61711	-0.03134	0.043226
PLO_canopy.layer.0	0.040475	0.015154	0.010524
PLO_canopy.layer.1	-0.74326	-0.27828	-0.19327
PLO_attended.0	0.002017	0.033981	-0.01415
PLO_attended.1	-0.04095	-0.68982	0.287256
MYR_mono.0	0.000204	0.009238	-0.00018
MYR_mono.1	-0.00849	-0.3843	0.007667
MYR_oligo.0	-0.00539	0.035831	-0.01379
MYR_oligo.1	0.098974	-0.65799	0.253171
MYR_poly.0	-0.00344	0.094116	-0.03749
MYR_poly.1	0.016897	-0.46274	0.184339
WSP_Female.average	-0.13944	0.211344	-0.03878
WSP_Female.min	-0.14028	0.201509	-0.05397
WSP_Female.max	-0.13643	0.215638	-0.02602
WSP_Female.varience	-0.07713	0.172634	0.053591
HSI	-0.00712	-0.05125	-0.02924
HPF_Poaceae.0	-0.03444	-0.06297	0.109104
HPF_Poaceae.1	0.101401	0.185423	-0.32125
HPF_Fabaceae.0	-0.02977	0.075379	-0.06376

Appendix 4.5 continued

Trait	CS1	CS2	CS3
HPF_Fabaceae.1	0.121225	-0.3069	0.25958
HPF_Rosaceae.0	0.02428	0.020704	-0.00045
HPF_Rosaceae.1	-0.17463	-0.14891	0.003241
HPF_Umbelliferae.0	-0.0005	-0.00298	-0.00346
HPF_Umbelliferae.1	0.052517	0.314811	0.365538
HPF_Aristolochiaeae.0	-0.00037	-0.0006	0.000281
HPF_Aristolochiaeae.1	0.078228	0.126871	-0.0596
HPF_Crassulaceae.0	-0.00048	-0.00028	-0.00043
HPF_Crassulaceae.1	0.050941	0.029269	0.045017
HPF_Papaveraceae.0	-9.84E-05	-0.00069	0.001683
HPF_Papaveraceae.1	0.020863	0.145579	-0.35669
HPF_Celastraceae.0	0.00052	0.004348	-0.00274
HPF_Celastraceae.1	-0.11029	-0.9218	0.5815
HPF_Cruciferae.0	-0.00317	-0.01145	-0.02872
HPF_Cruciferae.1	0.064304	0.232442	0.583039
HPF_Tropaeolaceae.0	-5.90E-05	-0.00312	-0.00701
HPF_Tropaeolaceae.1	0.012507	0.661943	1.485699
HPF_Resedaceae.0	-0.00074	-0.00424	-0.01123
HPF_Resedaceae.1	0.077694	0.447372	1.185183
HPF_Ericaceae.0	0.005271	0.020009	-0.0082
HPF_Ericaceae.1	-0.11949	-0.45353	0.185945
HPF_Cistaceae.0	-0.00393	0.023135	-0.01171
HPF_Cistaceae.1	0.089186	-0.52439	0.265532
HPF_Fagaceae.0	0.014821	0.017183	0.002973
HPF_Fagaceae.1	-0.7744	-0.89781	-0.15532
HPF_Urticaceae.0	0.005903	-0.021	-0.01786
HPF_Urticaceae.1	-0.24557	0.873452	0.743076
HPF_Polygonacea.0	-0.00662	0.001376	-0.00107
HPF_Polygonacea.1	0.134331	-0.02793	0.021802

Appendix 4.5 continued

Trait	CS1	CS2	CS3
HPF_Lamaciae.0	-0.00888	0.015263	-0.0136
HPF_Lamaciae.1	0.163133	-0.28029	0.249798
HPF_Geraniaceae.0	-0.0076	0.014785	-0.00765
HPF_Geraniaceae.1	0.194827	-0.37887	0.196132
HPF_Primulaceae.0	-0.00038	0.000311	0.000372
HPF_Primulaceae.1	0.081557	-0.06584	-0.07892
HPF_Caprifoliaceae.0	0.00487	-0.01101	0.005567
HPF_Caprifoliaceae.1	-0.1248	0.282198	-0.14265
HPF_Salicaceae.0	0.02697	-0.00676	0.007866
HPF_Salicaceae.1	-0.7937	0.199026	-0.23149
HPF_Betulaceae.0	0.002781	0.004051	-0.00047
HPF_Betulaceae.1	-0.58962	-0.85876	0.099603
HPF_Cannabaceae.0	0.008317	-6.15E-05	-0.00337
HPF_Cannabaceae.1	-0.58217	0.004302	0.235962
HPF_Violaceae.0	-0.00233	-0.01297	0.009501
HPF_Violaceae.1	0.039065	0.217187	-0.15914
HPF_Plantaginaceae.0	-0.00445	-0.01294	0.010563
HPF_Plantaginaceae.1	0.090234	0.262669	-0.21442
HPF_Scrophulariaceae.0	-0.00341	-0.01143	0.003452
HPF_Scrophulariaceae.1	0.100308	0.336448	-0.10158
HPF_Malvaceae.0	-3.91E-05	-0.00656	-0.00772
HPF_Malvaceae.1	0.004123	0.692438	0.813966
HPF_Asteraceae.0	-0.00176	-0.01476	-0.003
HPF_Asteraceae.1	0.060845	0.509235	0.103578
HPF_Orobrancaceae.0	-0.00214	-0.00512	0.003103
HPF_Orobrancaceae.1	0.111662	0.267594	-0.16214
HPF_Oleaceae.0	0.008335	0.010161	0.004904
HPF_Oleaceae.1	-0.58348	-0.71126	-0.3433
HPF_Gentianaceae.0	-0.00099	-0.00017	0.001052

Appendix 4.5 continued

Trait	CS1	CS2	CS3
HPF_Gentianaceae.1	0.104593	0.017439	-0.11102
HPF_Ulmaceae.0	0.008381	0.009882	0.001737
HPF_Ulmaceae.1	-0.88423	-1.04257	-0.18323
HPF_Rutaceae.0	0.000375	-0.00282	-0.00354
HPF_Rutaceae.1	-0.07942	0.597698	0.74964
HPF_Solanaceae.0	0.003718	0.003972	0.000783
HPF_Solanaceae.1	-0.78823	-0.84197	-0.16599
HPF_Rhamnaceae.0	0.008088	0.009312	0.001863
HPF_Rhamnaceae.1	-0.85324	-0.98246	-0.19659
HPF_Cypraceae.0	-0.00394	-0.00651	0.018254
HPF_Cypraceae.1	0.101038	0.166842	-0.46776
HPF_Juncaceae.0	-0.00165	-0.00363	0.003514
HPF_Juncaceae.1	0.115792	0.254433	-0.24597
HPF_Apocynaceae.0	0.000518	-0.00423	-0.00598
HPF_Apocynaceae.1	-0.10987	0.897543	1.268079
HPF_Convolvulaceae.0	0.000518	-0.00423	-0.00598
HPF_Convolvulaceae.1	-0.10987	0.897543	1.268079
HPF_Adoxaceae.0	0.001803	0.000541	0.002459
HPF_Adoxaceae.1	-0.38234	-0.11473	-0.52129
HPF_Plumbaginaceae.0	-0.00084	0.003332	-0.0062
HPF_Plumbaginaceae.1	0.178293	-0.70644	1.315302
HPF_Eleganaceae.0	-0.0003	0.00437	-0.00188
HPF_Eleganaceae.1	0.06348	-0.9264	0.399444
HPF_Lythraceae.0	-0.00084	0.003332	-0.0062
HPF_Lythraceae.1	0.178293	-0.70644	1.315302
HPF_Euphorbiaceae.0	-0.00095	-0.00185	-0.00332
HPF_Euphorbiaceae.1	0.200821	0.39248	0.704057
HPP_biennial.0	-0.02388	-0.05011	-0.06452
HPP_biennial.1	0.089149	0.187081	0.24086

Appendix 4.5 continued

Trait	CS1	CS2	CS3
HPP_annual.0	-0.04956	-0.06705	-0.07254
HPP_annual.1	0.091194	0.123378	0.133481
HPP_herbaceaous.perennial.0	-0.52244	-0.1988	-0.0572
HPP_herbaceaous.perennial.1	0.092365	0.035147	0.010112
HPP_woody.perennial.0	0.102919	0.082492	-0.08097
HPP_woody.perennial.1	-0.23961	-0.19205	0.188507
HPG_short.herb.grass.0	-0.58335	-0.17828	-0.06725
HPG_short.herb.grass.1	0.09194	0.028098	0.010599
HPG_tall.herb.0	-0.05613	-0.10371	-0.08211
HPG_tall.herb.1	0.073827	0.136399	0.10799
HPG_shrub.0	0.08516	0.070936	-0.08507
HPG_shrub.1	-0.22228	-0.18516	0.222042
HPG_tree.0	0.082237	0.031309	0.006115
HPG_tree.1	-0.61842	-0.23544	-0.04598
HPG_non.plant.0	-0.00075	0.003755	-0.00077
HPG_non.plant.1	0.158597	-0.79598	0.164189
HPG_liana.0	0.006915	-0.01446	-0.02034
HPG_liana.1	-0.20349	0.425464	0.598712
HPB_flowers.pod.0	-0.01194	0.077868	-0.06231
HPB_flowers.pod.1	0.053264	-0.34741	0.27799
HPB_leaf.0	0.143799	-0.39914	0.438233
HPB_leaf.1	-0.01012	0.02808	-0.03083
HPB_bud.0	0.01625	0.033419	-0.01641
HPB_bud.1	-0.20007	-0.41147	0.202098
HPB_stem.0	-0.00403	0.004772	-0.01101
HPB_stem.1	0.081858	-0.09688	0.223593
LEV_buried.0	-0.00325	0.010122	0.000548
LEV_buried.1	0.135113	-0.42108	-0.02281
LEV_groundlayer.0	-0.07386	0.0136	0.065218

LEV_groundlayer.1	0.083463	-0.01537	-0.0737
LEV_fieldlayer.0	-0.45404	-0.18898	-0.05317
LEV_fieldlayer.1	0.086242	0.035896	0.0101
LEV_shrub.layer.0	0.0688	0.028002	0.003057
LEV_shrub.layer.1	-0.56835	-0.23132	-0.02525
LEV_canopy.layer.0	0.047658	0.009956	0.010914
LEV_canopy.layer.1	-0.73321	-0.15318	-0.16791
LEV_attended.0	-0.02559	0.129023	-0.05814
LEV_attended.1	0.092891	-0.46841	0.211091
ELT_single.0	-0.06696	0.353287	-0.02979
ELT_single.1	0.011839	-0.06246	0.005267
ELT_small.batch.0	-0.00348	-0.0362	0.014563
ELT_small.batch.1	0.018999	0.197434	-0.07943
ELT_large.batch.0	0.014609	-0.04485	0.000419
ELT_large.batch.1	-0.12069	0.370499	-0.00346
ELL_bare.earth.0	-0.00913	-0.01317	0.03181
ELL_bare.earth.1	0.068664	0.099014	-0.23921
ELL_short.turf.herbs.0	-0.42232	0.07702	0.047248
ELL_short.turf.herbs.1	0.109953	-0.02005	-0.0123
ELL_tall.mature.herbs.0	-0.03115	-0.07887	-0.07868
ELL_tall.mature.herbs.1	0.055025	0.139297	0.138975
ELL_shrub.0	0.056459	0.029323	0.002895
ELL_shrub.1	-0.42457	-0.22051	-0.02177
ELL_tree.trunk.0	0.004131	-0.00483	0.003818
ELL_tree.trunk.1	-0.28919	0.337934	-0.26723
ELL_canopy.0	0.059944	0.017753	0.014457
ELL_canopy.1	-0.69112	-0.20468	-0.16668
ELL_liana.0	0.003931	0.00246	0.001048
ELL_liana.1	-0.27516	-0.17221	-0.07334
FLM_Average	-0.01523	0.066459	0.331723
FLM_Min	0.007351	-0.05566	0.305892

Appendix 4.5 continued

Trait	CS1	CS2	CS3
FLM_Max	-0.03485	0.131265	0.28747
AFB_herb.flower.0	-0.51585	-0.04395	-0.21255
AFB_herb.flower.1	0.020131	0.001715	0.008295
AFB_grass.sedge.ergot.0	0.00449	-0.00435	0.005759
AFB_grass.sedge.ergot.1	-0.23461	0.227451	-0.30092
AFB_shrub.tree.flower.0	0.049292	-0.04185	-0.02026
AFB_shrub.tree.flower1	-0.1741	0.147822	0.071574
AFB_honeydew.0	0.047378	0.005209	-0.00125
AFB_honeydew.1	-0.4572	-0.05027	0.012109
AFB_sap.0	0.036388	-0.02612	0.006297
AFB_sap.1	-0.48032	0.344846	-0.08312
AFB_decaying.plants.0	0.029081	-0.02898	-0.0047
AFB_decaying.plants.1	-0.48711	0.485432	0.078684
AFB_animal.0	0.039562	-0.02384	-0.00695
AFB_animal.1	-0.19451	0.117195	0.034166
AFB_mineral.0	0.014899	-0.01902	-0.04054
AFB_mineral.1	-0.02741	0.035003	0.074597
BAT_dorsalabsorb.0	-0.06445	-0.11149	0.082976
BAT_dorsalabsorb.1	0.022436	0.038809	-0.02888
BAT_doesalreflect.0	-0.04297	0.088849	-0.08826
BAT_doesalreflect.1	0.143827	-0.29737	0.295417
BAT_lateral.0	0.034365	0.020331	0.029863
BAT_lateral.1	-0.13991	-0.08278	-0.12158
BAL_rock.bare.earth.0	-0.02729	-0.05026	-0.02513
BAL_rock.bare.earth.1	0.019971	0.036775	0.018389
BAL_short.herb.0	-0.22269	0.038705	-0.17402
BAL_short.herb.1	0.093529	-0.01626	0.073089
BAL_grasses.0	-0.06109	-0.04343	0.002817
BAL_grasses.1	0.103617	0.073669	-0.00478

Appendix 4.5 continued

Trait	CS1	CS2	CS3
BAL_tall.herbs.0	0.04972	-0.07408	-0.05661
BAL_tall.herbs.1	-0.06795	0.101247	0.077364
BAL_shrub.0	0.080277	-0.04237	-0.04097
BAL_shrub.1	-0.20471	0.108035	0.104484
BAL_tree.canopy.0	0.04757	-0.01841	-0.00351
BAL_tree.canopy.1	-0.37462	0.144991	0.027621
BAL_man.made.structure.0	0.005048	-0.01657	-0.02118
BAL_man.made.structure.1	-0.14855	0.487702	0.623389

Appendix 4.6: Calinhara scores for the first 10 proposed clustering patterns, A higher score indicates that this number of clusters is preferred to other potential numbers of clusters.

Number of clusters	1	2	3	4	5	6	7	8	9	10
Calinhara score	NA	18.14	9.74	18.45	29.20	23.26	19.68	24.95	22.73	20.14

Appendix 4.7: Range size and monitoring status information for all butterflies included in the analysis. Conservation status is coded from 1-5 (1= critically endangered, 2 = endangered, 3 = vulnerable, 4= near threatened, 5 =least concern). Range size is given in km^3. Data on conservation status is taken from van Swaay et. al. (2010). Data on range size is taken from van Swaay et al. (2015).

Species	Conservation status	Range size
Charaxes jasius	5	127
Limenitis populi	5	529
Limenitis reducta	5	410
Limenitis camilla	5	526
Neptis rivularis	5	150
Neptis sappho	5	104
Apatura iris	5	571
Apatura ilia	5	528
Apatura metis	5	47
Araschnia levana	5	626
Aglais urticae	5	1271
Nymphalis antiopa	5	910
Nymphalis polychloros	5	845
Nymphalis xanthomelas	5	113
Nymphalis vaualbum	5	72
Aglais io	5	1136
Aglais ichnusa	NA	NA
Polygonia egea	5	158
Euphydryas maturna	3	210
Euphydryas intermedia	5	28
Euphydryas iduna	4	24
Euphydryas cynthia	5	58
Euphydryas aurinia	5	538
Euphydryas desfontainii	4	41
Melitaea cinxia	5	673
Melitaea arduinna	5	14
Melitaea phoebe	5	521

Appendix 4.7 continued

Species	Conservation status	Range size
Melitaea ornata	NA	NA
Melitaea celadussa	NA	NA
Melitaea aetherie	NA	26
Melitaea didyma	5	621
Melitaea deserticola	NA	NA
Melitaea trivia	5	260
Melitaea diamina	5	461
Melitaea athalia	5	1011
Melitaea deione	5	108
Melitaea varia	5	41
Melitaea parthenoides	5	172
Melitaea aurelia	4	268
Melitaea britomartis	4	99
Melitaea asteria	5	15
Vanessa atalanta	5	1343
Vanessa cardui	5	1373
Vanessa virginiensis	NA	12
Vanessa vulcania	5	NA
Argynnis pandora	5	320
Argynnis paphia	5	1024
Argynnis laodice	5	100
Speyeria aglaja	5	1132
Argynnis auresiana	NA	NA
Fabriciana adippe	5	888
Fabriciana niobe	5	646
Fabriciana elisa	5	8
Issoria lathonia	5	976
Brenthis hecate	5	190
Brenthis ino	5	699

Appendix 4.7 continued

Species	Conservation status	Range size
Brenthis daphne	5	323
Boloria pales	5	101
Boloria napaea	5	112
Boloria aquilonaris	5	478
Boloria graeca	5	37
Boloria eunomia	5	311
Boloria selene	5	998
Boloria thore	5	79
Boloria euphrosyne	5	963
Boloria titania	4	141
Boloria dia	5	554
Boloria chariclea	4	22
Boloria freija	5	144
Boloria polaris	3	18
Boloria frigga	5	145
Boloria improba	2	6
Melanargia galathea	5	802
Melanargia lachesis	5	111
Melanargia russiae	5	111
Melanargia larissa	5	73
Melanargia occitanica	5	85
Melanargia arge	5	33
Melanargia ines	5	79
Melanargia lucasi	NA	NA
Melanargia pherusa	5	4
Hipparchia syriaca	5	54
Hipparchia fagi	4	309
Hipparchia hermione	4	237
Hipparchia ellena	NA	NA

Appendix 4.7 continued

Species	Conservation status	Range size
Hipparchia volgensis	5	42
Hipparchia semele	5	814
Hipparchia cretica	5	9
Hipparchia christenseni	5	1
Hipparchia aristaeus	5	13
Hipparchia azorina	5	NA
Hipparchia leighebi	4	1
Hipparchia blachieri	NA	9
Hipparchia senthes	5	56
Hipparchia azorina occidentalis	NA	NA
Hipparchia algirica	NA	NA
Hipparchia autonoe	5	NA
Hipparchia bacchus	3	NA
Hipparchia caroli	NA	NA
Hipparchia cypriensis	5	NA
Hipparchia genava	NA	NA
Hipparchia gomera	5	NA
Hipparchia tamadabae	5	NA
Hipparchia tilosi	3	NA
Hipparchia sbordonii	4	NA
Hipparchia neapolitana	5	NA
Hipparchia miguelensis	5	NA
Hipparchia mersina	NA	3
Hipparchia neomiris	5	9
Hipparchia pellucida	5	2
Hipparchia powelli	NA	NA
Hipparchia statilinus	4	360
Hipparchia fatua	5	48
Hipparchia hansii	NA	NA

Appendix 4.7 continued

Species	Conservation status	Range size
Hipparchia wyssii	5	NA
Hipparchia fidia	5	92
Chazara briseis	4	353
Chazara prieuri	5	8
Pseudochazara atlantis	NA	NA
Pseudochazara graeca	5	19
Pseudochazara mercurius	NA	NA
Pseudochazara amymone	3	NA
Pseudochazara mamurra	NA	NA
Pseudochazara geyeri	5	6
Pseudochazara cingovskii	1	2
Pseudochazara orestes	3	1
Pseudochazara mniszechii	5	6
Pseudochazara anthelea	5	45
Oeneis glacialis	5	46
Oeneis norna	4	54
Oeneis bore	5	19
Oeneis jutta	5	166
Satyrus actaea	5	73
Satyrus ferula	5	144
Minois dryas	5	48
Brintesia circe	5	416
Berberia abdelkader	NA	NA
Berberia lambessanus	NA	NA
Arethusana arethusa	5	229
Erebia ligea	5	564
Erebia euryale	5	203
Erebia eriphyle	5	34
Erebia manto	5	89

Appendix 4.7 continued

Species	Conservation status	Range size
Erebia flavofasciata	4	5
Erebia epiphron	5	137
Erebia claudina	4	8
Erebia orientalis	5	5
Erebia christi	3	1
Erebia melampus	5	56
Erebia pharte	5	59
Erebia sudetica	3	13
Erebia aethiops	5	326
Erebia triarius	5	72
Erebia embla	5	123
Erebia disa	5	36
Erebia medusa	5	361
Erebia polaris	5	16
Erebia albergana	5	65
Erebia pluto	5	51
Erebia gorge	5	92
Erebia aethiopella	5	10
Erebia rondoui	5	NA
Erebia rhodopensis	5	10
Erebia mnestra	5	22
Erebia gorgone	5	13
Erebia epistygne	4	24
Erebia tyndarus	5	25
Erebia cassioides	5	65
Erebia hispania	5	17
Erebia nivalis	5	14
Erebia ottomana	5	NA
Erebia calcarius	5	9

Appendix 4.7 continued

Species	Conservation status	Range size
Erebia pronoe	5	81
Erebia melas	5	31
Erebia lefebvrei	5	12
Erebia scipio	5	9
Erebia stiria	5	17
Erebia styx	5	25
Erebia montana	5	38
Erebia zapateri	5	6
Erebia neoridas	5	48
Erebia oeme	5	89
Erebia meolans	5	139
Erebia palarica	5	5
Erebia pandrose	5	194
Erebia sthennyo	5	10
Proterebia phegea	NA	NA
Maniola jurtina	5	1289
Maniola megala	NA	2
Maniola nurag	5	5
Maniola chia	5	2
Maniola telmessia	5	7
Maniola halicarnassus	4	NA
Maniola cypricola	5	NA
Hyponephele maroccana	NA	NA
Hyponephele lupina	5	143
Hyponephele lycaon	5	365
Aphantopus hyperantus	5	1002
Pyronia janiroides	NA	NA
Pyronia tithonus	5	515
Pyronia cecilia	5	219

Appendix 4.7 continued

Species	Conservation status	Range size
Pyronia bathseba	5	104
Coenonympha tullia	3	553
Coenonympha rhodopensis	5	39
Coenonympha pamphilus	5	1371
Coenonympha thyrsis	5	9
Coenonympha corinna	5	17
Coenonympha corinna elbana	NA	NA
Coenonympha dorus	5	107
Coenonympha vaucheri	NA	NA
Coenonympha arcania	5	736
Coenonympha gardetta darwiniana	NA	NA
Coenonympha gardetta	5	61
Coenonympha arcanioides	NA	NA
Coenonympha orientalis	3	11
Coenonympha leander	5	27
Coenonympha glycerion	5	574
Coenonympha hero	3	173
Coenonympha oedippus	2	52
Coenonympha fettigii	NA	NA
Pararge aegeria	5	1178
Pararge xiphioides	5	NA
Pararge xiphia	2	NA
Lasiommata megera	5	1053
Lasiommata petropolitana	5	352
Lasiommata meadevaldoi	NA	NA
Lasiommata paramegaera	5	15
Lasiommata maera	5	888
Lopinga achine	3	275
Ypthima asterope	NA	2

Appendix 4.7 continued

Species	Conservation status	Range size
Kirinia roxelana	5	86
Kirinia climene	5	9
Libythea celtis	5	181
Danaus plexippus	NA	15
Danaus chrysippus	NA	38
Callophrys rubi	5	1192
Callophrys avis	5	37
Thecla betulae	5	628
Cigaritis zohra	NA	NA
Cigaritis allardi	NA	NA
Cigaritis siphax	NA	NA
Tomares ballus	5	51
Tomares nogelii	2	2
Tomares mauretanicus	NA	NA
Deudorix livia	NA	NA
Favonius quercus	5	777
Laeosopis roboris	5	82
Satyrium w-album	5	553
Satyrium pruni	5	408
Satyrium esculi	5	106
Satyrium acaciae	5	349
Satyrium ilicis	5	586
Satyrium spini	5	483
Lycaena phlaeas	5	1340
Lycaena dispar	5	383
Lycaena helle	2	148
Lycaena ottomana	5	37
Lycaena candens	5	NA
Lycaena hippothoe	5	689

Appendix 4.7 continued

Species	Conservation status	Range size
Lycaena thersamon	5	199
Lycaena phoebus	NA	NA
Lycaena alciphron	5	519
Lycaena virgaureae	5	756
Lycaena thetis	NA	6
Lycaena tityrus	5	673
Lampides boeticus	5	361
Leptotes pirithous	5	287
Tarucus balkanicus	5	19
Tarucus theophrastus	5	4
Tarucus rosaceus	NA	NA
Cacyreus marshalli	NA	33
Cyclyrius webbianus	5	NA
Azanus jesous	NA	NA
Azanus ubaldus	NA	NA
Zizeeria knysna	NA	39
Zizeeria karsandra	NA	NA
Luthrodes galba	NA	NA
Freyeria trochylus	NA	19
Cupido minimus	5	753
Cupido alcetas	5	146
Cupido argiades	5	478
Cupido decoloratus	4	67
Cupido osiris	5	131
Cupido lorquinii	5	17
Cupido minimus carswelli	5	NA
Plebejus argus	5	991
Kretania sephirus	NA	NA
Kretania hesperica	NA	8

Appendix 4.7 continued

Species	Conservation status	Range size
Plebejus idas	5	774
Plebejus bellieri	5	10
Plebejus argyrognomon	5	290
Plebejus martini	NA	NA
Kretania eurypilus	NA	2
Kretania psylorita	5	5
Plebejus allardi	NA	NA
Agriades optilete	5	480
Plebejus vogelii	NA	NA
Agriades glandon	5	45
Agriades aquilo	5	21
Agriades orbitulus	5	63
Agriades pyrenaicus	5	5
Agriades zullichi	2	2
Aricia nicias	5	78
Aricia anteros	4	43
Aricia morronensis	5	15
Eumedonia eumedon	5	441
Aricia agestis	5	700
Aricia artaxerxes	5	435
Polyommatus icarus	5	1476
Neolysandra coelestina	5	3
Polyommatus escheri	5	167
Polyommatus amandus	5	544
Polyommatus dorylas	4	330
Polyommatus golgus	3	3
Polyommatus nivescens	4	26
Polyommatus atlanticus	NA	NA
Cyaniris semiargus	5	930

Polyommatus thersites	5	351
Polyommatus icarus andronicus	NA	NA
Polyommatus celina	NA	NA
Polyommatus eros	4	88
Polyommatus daphnis	5	305
Lysandra punctifera	NA	NA
Lysandra coridon	5	575
Lysandra hispana	5	50
Lysandra albicans	5	40
Polyommatus dolus	5	24
Polyommatus dolus virgilius	NA	NA
Polyommatus fulgens	5	27
Polyommatus orphicus	3	9
Polyommatus aroaniensis	5	13
Polyommatus violetae	3	3
Polyommatus fabressei	5	11
Polyommatus humedasae	2	2
Polyommatus nephohiptamenos	4	NA
Polyommatus admetus	5	57
Polyommatus ripartii	5	59
Polyommatus damon	4	163
Lysandra bellargus	5	601
Phengaris arion	2	522
Phengaris alcon	5	354
Phengaris teleius	3	252
Phengaris nausithous	4	188
Iolana iolas	4	102
Glaucopsyche alexis	5	609
Glaucopsyche melanops	5	103

Appendix 4.7 continued

Species	Conservation status	Range size
Glaucopsyche paphos	5	NA
Scolitantides orion	5	260
Pseudophilotes bavius	5	20
Pseudophilotes fatma	NA	NA
Pseudophilotes panoptes	4	41
Pseudophilotes vicrama	4	212
Pseudophilotes baton	5	222
Pseudophilotes barbagiae	5	1
Pseudophilotes abencerragus	5	27
Turanana taygetica	2	3
Hamearis lucina	5	497
Leptidea duponcheli	5	67
Leptidea sinapis	5	1089
Leptidea reali	5	NA
Leptidea morsei	4	49
Aporia crataegi	5	894
Pieris krueperi	5	51
Pieris rapae	5	1363
Pieris mannii	5	203
Pieris ergane	5	125
Pieris napi	5	1405
Pieris bryoniae	5	114
Pieris balcana	5	NA
Pieris segonzaci	NA	NA
Pieris brassicae	5	1353
Pieris cheiranthi	2	NA
Euchloe simplonia	5	32
Euchloe ausonia	5	352
Euchloe insularis	5	16

Appendix 4.7 continued

Species	Conservation status	Range size
Euchloe crameri	5	197
Euchloe tagis	5	56
Euchloe charlonia	5	NA
Euchloe bazae	3	5
Euchloe penia	5	14
Euchloe belemia	5	63
Euchloe grancanariensis	5	NA
Euchloe hesperidum	5	NA
Euchloe eversi	5	NA
Euchloe falloui	NA	NA
Anthocharis gruneri	5	36
Anthocharis cardamines	5	1245
Anthocharis damone	5	19
Anthocharis belia	NA	NA
Anthocharis euphenoides	5	131
Pontia daplidice	5	921
Pontia edusa	5	NA
Pontia chloridice	5	11
Pontia callidice	5	60
Pontia glauconome	NA	NA
Zegris eupheme	4	36
Colotis evagore	NA	10
Colias phicomone	4	83
Colias tyche	5	6
Colias hecla	4	24
Colias palaeno	5	417
Colias chrysotheme	3	36
Colias erate	5	138
Colias crocea	5	1028

Appendix 4.7 continued

Species	Conservation status	Range size
Colias hyale	5	682
Colias alfacariensis	5	494
Colias caucasica	5	13
Colias aurorina	5	14
Colias myrmidone	2	94
Gonepteryx cleopatra	5	303
Gonepteryx cleobule	3	NA
Gonepteryx maderensis	2	NA
Gonepteryx farinosa	5	50
Gonepteryx rhamni	5	1177
Papilio machaon	5	1224
Papilio alexanor	5	49
Papilio saharae	NA	NA
Papilio hospiton	5	14
Iphiclides podalirius	5	755
Iphiclides feisthamelii	NA	NA
Zerynthia rumina	5	128
Zerynthia polyxena	5	215
Zerynthia cassandra	NA	44
Zerynthia cretica	5	7
Zerynthia cerisy	4	61
Archon apollinus	4	13
Parnassius mnemosyne	4	371
Parnassius phoebus	4	48
Parnassius apollo	4	354
Carcharodus lavatherae	4	146
Carcharodus alceae	5	615
Carcharodus tripolinus	5	NA
Carcharodus floccifera	4	277

Appendix 4.7 continued

Species	Conservation status	Range size
Carcharodus stauderi	NA	2
Carcharodus baeticus	5	56
Carcharodus orientalis	5	54
Erynnis marloyi	5	31
Erynnis tages	5	842
Muschampia proto	5	88
Muschampia mohammed	NA	NA
Muschampia cribrellum	4	7
Muschampia tessellum	5	22
Pyrgus malvae	5	959
Pyrgus serratulae	5	318
Pyrgus carlinae	5	30
Pyrgus armoricanus	5	311
Pyrgus foulquieri	NA	NA
Pyrgus onopordi	5	105
Pyrgus alveus	5	476
Pyrgus warrenensis	5	29
Pyrgus cinarae	5	14
Pyrgus sidae	5	77
Pyrgus carthami	5	264
Pyrgus centaureae	5	162
Pyrgus cacaliae	5	55
Pyrgus andromedae	5	83
Spialia sertorius	5	380
Spialia orbifer	5	129
Spialia phlomidis	5	25
Heteropterus morpheus	5	270
Carterocephalus palaemon	5	585
Carterocephalus silvicola	5	222

Appendix 4.7 continued

Species	Conservation status	Range size
Thymelicus acteon	4	496
Thymelicus hamza	NA	NA
Thymelicus hyrax	5	10
Thymelicus lineola	5	926
Thymelicus sylvestris	5	832
Hesperia comma	5	807
Ochlodes sylvanus	5	1058
Gegenes nostrodamus	5	65
Aricia cramera	5	138
Gegenes pumilio	5	76
Aricia montensis	5	32
Borbo borbonica	NA	1
Catopsilia florella	NA	NA
Pelopidas thrax	NA	1
Hipparchia maderensis	NA	NA
Agriades dardanus	4	2
Plebejidea loewii	NA	3
Plebejus psyloritus	5	5
Kretania pylaon	4	NA
Kretania trappi	4	NA
Lysandra corydonius	5	NA
Polyommatus damocles	NA	NA
Polyommatus iphigenia	NA	2
Pseudochazara euxina	2	NA
Pseudochazara williamsi	NA	NA
Pyrgus cirsii	3	94
Pyrgus malvoides	5	NA
Satyrium ledereri	NA	1
Spialia therapne	5	7

Appendix 4.7 continued

Species	**Conservation status**	**Range size**
Thymelicus christi	5	NA
Tomares callimachus	5	NA
Iolana debilitata	NA	NA
Leptidea juvernica	NA	NA

Appendix 4.8: Species scores from a PCA of the EBMS species dataset of European butterflies.

Species	RS1	RS2	RS3
Charaxes jasius	-2.74806	0.329406	0.024402
Limenitis populi	-2.61658	0.439663	-1.4347
Limenitis reducta	-1.87723	0.358824	0.374644
Limenitis camilla	-2.5563	0.807287	-0.29569
Apatura iris	-2.82719	0.452701	-0.67114
Apatura ilia	-3.14219	0.142517	-0.49933
Araschnia levana	-0.11341	1.432055	0.99401
Aglais urticae	-1.00616	2.266244	1.79296
Nymphalis antiopa	-3.39726	1.102469	-0.23974
Nymphalis polychloros	-3.47496	1.264279	0.434139
Nymphalis xanthomelas	-3.37055	0.685562	-0.37721
Aglais io	-1.31164	2.619751	2.106672
Euphydryas maturna	-1.3915	-0.31098	-1.32226
Euphydryas aurinia	0.080762	1.531475	-0.29222
Euphydryas desfontainii	0.337231	1.009681	-0.60121
Melitaea cinxia	0.558166	0.672867	-0.6062
Melitaea phoebe	0.518102	1.146394	-0.12509
Melitaea ornata	0.395671	0.835761	-0.15742
Melitaea celadussa	0.619219	0.394484	-0.69546
Melitaea didyma	0.669381	1.23711	0.468291
Melitaea trivia	0.451517	0.660627	0.120181
Melitaea diamina	0.645361	0.637445	-0.46705
Melitaea athalia	0.476108	1.026822	-0.44009
Melitaea deione	0.164631	0.638888	0.151108
Melitaea parthenoides	0.458757	0.848323	-0.75919
Melitaea aurelia	0.365592	0.841052	-0.66063
Melitaea britomartis	0.364801	0.626107	-0.83122
Vanessa atalanta	-1.33654	2.829501	2.187036
Vanessa cardui	-0.70086	2.689885	2.34342
Argynnis pandora	0.066474	1.07451	-0.25198
Argynnis paphia	-0.85522	0.702173	-0.54294
Argynnis laodice	-0.11012	0.654314	-1.09126
Speyeria aglaja	-0.11209	0.487886	-0.47607

Appendix 4.8 continued

Species	**RS1**	**RS2**	**RS3**
Fabriciana adippe	-0.24012	1.005898	-0.38363
Fabriciana niobe	0.273164	0.553331	-1.03864
Issoria lathonia	0.234092	0.948315	1.183883
Brenthis hecate	0.146291	0.14131	-0.43279
Brenthis ino	-0.32449	-0.18973	-0.62433
Brenthis daphne	-0.61011	0.009487	-0.24084
Boloria aquilonaris	-0.16797	-0.43066	-0.60555
Boloria eunomia	0.587259	0.394617	-0.76641
Boloria selene	0.540963	0.15077	-0.503
Boloria thore	0.51475	0.54292	-0.74927
Boloria euphrosyne	0.310143	0.358741	-0.58607
Boloria titania	-0.21306	-0.48819	-0.54823
Boloria dia	0.496782	0.190741	0.361612
Boloria frigga	-0.22173	-0.22239	-0.843
Melanargia galathea	0.502497	0.916792	-0.90355
Melanargia lachesis	0.620965	0.570935	-1.00367
Melanargia russiae	0.472026	0.436229	-0.97077
Melanargia occitanica	0.54253	0.572476	-1.05301
Hipparchia fagi	-0.47393	0.979303	-1.03054
Hipparchia hermione	0.183585	0.398183	-1.36941
Hipparchia semele	0.207644	0.802625	-1.11051
Hipparchia statilinus	0.240971	0.365479	-0.80079
Hipparchia fidia	0.234711	0.683744	-1.01302
Chazara briseis	-0.11168	0.925535	-0.9109
Oeneis jutta	-0.04669	0.507249	-1.53568
Satyrus actaea	0.177299	0.385912	-1.04091
Satyrus ferula	0.245795	0.729545	-0.92453
Minois dryas	0.15656	1.101719	-1.24389
Brintesia circe	-0.34254	1.548884	-0.93096
Arethusana arethusa	0.514182	0.575313	-1.10238
Erebia ligea	0.361984	0.212331	-1.22942
Erebia euryale	0.492568	0.391991	-1.44644
Erebia epiphron	0.506428	0.280648	-1.3943
Erebia aethiops	0.400115	0.625593	-1.00761

Appendix 4.8 continued

Species	RS1	RS2	RS3
Erebia triaria	0.268519	0.35109	-0.77325
Erebia medusa	0.618165	0.121029	-1.11056
Erebia rondoui	0.646488	0.378855	-0.91072
Erebia cassioides	0.492727	0.171333	-1.13577
Erebia neoridas	0.433706	0.273226	-1.14113
Erebia oeme	0.546742	0.459159	-1.41898
Erebia meolans	0.456791	0.430754	-0.81516
Erebia pandrose	0.594134	0.508647	-1.06423
Proterebia phegea	0.319728	0.421972	-1.4276
Maniola jurtina	0.349952	0.991124	-0.70249
Hyponephele lycaon	0.542888	0.251098	-0.88049
Aphantopus hyperantus	0.391632	0.677432	-1.0058
Pyronia tithonus	0.46778	0.479645	-0.62261
Pyronia cecilia	0.604269	-0.03573	-0.74961
Pyronia bathseba	0.510467	0.11108	-0.69113
Coenonympha tullia	0.328076	0.172725	-0.96476
Coenonympha pamphilus	0.64599	0.539099	0.385112
Coenonympha dorus	0.410161	-0.02262	-1.10197
Coenonympha arcania	0.102443	0.442016	-0.77841
Coenonympha glycerion	0.398052	-0.03206	-0.70276
Coenonympha hero	0.335541	0.2566	-0.5772
Coenonympha oedippus	0.09835	0.260884	-0.86216
Pararge aegeria	-0.01826	1.194001	0.813571
Lasiommata megera	0.128191	0.950198	0.395116
Lasiommata petropolitana	0.599639	0.234989	-0.32328
Lasiommata maera	0.562386	0.77796	-0.58991
Lopinga achine	0.087871	0.614426	-1.15597
Libythea celtis	-2.17599	-0.30261	0.109907
Danaus chrysippus	-0.39988	2.432787	3.216493
Callophrys rubi	-0.4014	-2.49855	1.474981
Callophrys avis	-1.0939	-1.33244	-0.17699
Thecla betulae	-2.14589	-2.32767	0.252644
Tomares ballus	0.461804	-0.83424	-0.05628
Favonius quercus	-2.17501	-2.08558	-0.25148
Laeosopis roboris	-1.4117	-2.10303	-0.78157

Appendix 4.8 continued

Species	RS1	RS2	RS3
Satyrium w-album	-3.56746	-3.36963	-0.50849
Satyrium pruni	-1.95176	-1.51234	-0.03242
Satyrium esculi	-2.66236	-1.99671	-0.39491
Satyrium acaciae	-2.02034	-1.26848	-0.80204
Satyrium ilicis	-2.86872	-2.28216	-0.42102
Satyrium spini	-2.64314	-1.95628	-0.4888
Lycaena phlaeas	0.481101	0.191569	1.153334
Lycaena dispar	0.248181	0.229416	0.660848
Lycaena helle	0.58488	-0.32975	0.475322
Lycaena hippothoe	0.599182	-0.35369	-0.33802
Lycaena alciphron	0.689622	-0.2672	-0.38906
Lycaena virgaureae	0.626379	-0.30293	-0.19647
Lycaena tityrus	0.639996	-0.46834	0.968739
Lampides boeticus	0.515407	-1.11768	2.262285
Leptotes pirithous	0.648886	-1.91479	3.336275
Cacyreus marshalli	0.653845	-1.01166	1.856673
Cupido minimus	0.574849	-1.40511	1.465776
Cupido alcetas	0.770924	-0.62571	1.431635
Cupido argiades	0.630778	-0.28419	1.611027
Cupido osiris	0.640125	-1.20272	1.171262
Plebejus argus	0.408583	-2.25994	0.969725
Plebejus idas	0.231032	-2.51099	1.013194
Plebejus argyrognomon	0.763612	-0.69035	0.192941
Agriades optilete	-0.0715	-0.79517	-0.10534
Aricia nicias	0.748105	-1.25229	-0.39439
Aricia morronensis	0.61152	-0.95321	0.078969
Eumedonia eumedon	0.655722	-0.93986	-0.22193
Aricia agestis	0.783172	-1.10987	0.920114
Aricia artaxerxes	0.881142	-1.17831	-0.09951
Polyommatus icarus	0.439449	-1.08673	1.372479
Polyommatus escheri	0.781918	-0.98386	-0.18829
Polyommatus amandus	0.715188	-0.74445	-0.11412
Polyommatus dorylas	0.723881	-0.71982	-0.03374
Polyommatus nivescens	0.798863	-0.69774	-0.10284
Cyaniris semiargus	0.720504	-0.6986	0.522447

Appendix 4.8 continued

Species	RS1	RS2	RS3
Polyommatus thersites	0.783907	-1.01479	0.934082
Polyommatus celina	0.483963	-0.84839	2.381315
Polyommatus eros	0.48424	-1.30146	0.151022
Polyommatus daphnis	0.663145	-1.00493	-0.05853
Lysandra coridon	0.431019	-1.40155	-0.04543
Lysandra hispana	0.532004	-0.93508	0.76538
Polyommatus fulgens	0.695229	-1.01503	-0.59528
Polyommatus ripartii	0.68502	-0.99633	-0.22312
Polyommatus damon	0.532296	-1.18395	-0.63815
Lysandra bellargus	0.361498	-1.2592	1.163585
Phengaris arion	0.577204	-2.15751	0.416468
Phengaris alcon	0.680554	-1.43694	-0.27099
Phengaris teleius	0.55127	-1.55671	-0.05804
Phengaris nausithous	0.583168	-1.63008	-0.12479
Glaucopsyche alexis	0.357329	-1.01087	0.967132
Glaucopsyche melanops	0.328153	-1.63373	0.515765
Scolitantides orion	0.74117	-0.5848	0.626464
Pseudophilotes panoptes	0.644638	-1.71597	1.525402
Pseudophilotes baton	0.568914	-1.27383	0.690151
Hamearis lucina	0.29682	-0.17846	-0.20018
Leptidea duponcheli	0.484146	0.132471	0.558234
Leptidea sinapis	0.297652	0.600309	1.005145
Leptidea reali	-1.08358	0.798528	0.77382
Aporia crataegi	-1.66088	0.347457	-0.58266
Pieris rapae	0.045519	1.794194	3.768489
Pieris mannii	0.083694	0.221964	1.629005
Pieris ergane	0.537343	0.590558	1.481036
Pieris napi	0.36605	0.95635	1.337484
Pieris bryoniae	0.2904	0.040426	-0.10135
Pieris brassicae	-0.32928	1.406744	2.076102
Euchloe crameri	0.052174	0.401993	1.106575
Anthocharis cardamines	0.39476	0.380822	0.886346
Anthocharis euphenoides	0.379645	-0.12374	0.361178
Pontia daplidice	0.520007	0.631008	2.243966
Colias tyche	-0.09734	-0.46463	-0.63032

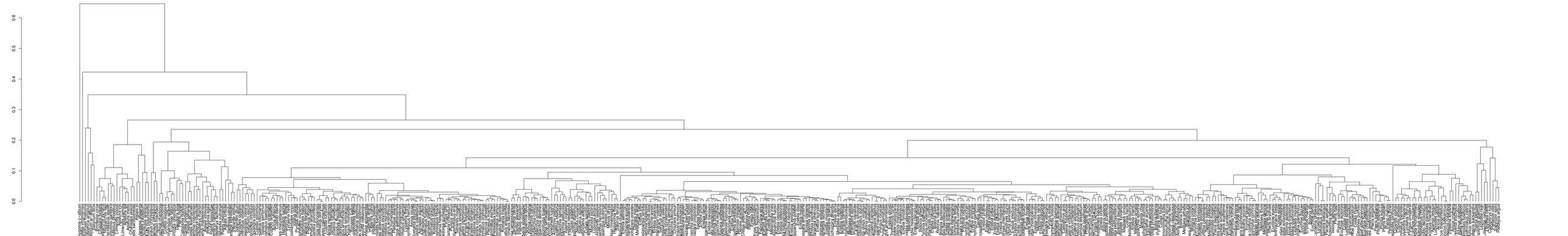
Appendix 4.8 continued

Species	RS1	RS2	RS3
Colias palaeno	-0.42179	-0.67203	-0.54058
Colias crocea	0.284784	0.464801	1.407599
Colias hyale	0.396406	0.327686	1.348621
Colias alfacariensis	0.610436	0.106119	0.615263
Gonepteryx cleopatra	-2.37969	0.188621	1.047189
Gonepteryx rhamni	-2.42821	0.399912	1.009877
Papilio machaon	-0.28906	1.620057	1.901469
Iphiclides podalirius	-2.1206	0.843765	0.787248
Iphiclides feisthamelii	-2.14749	0.4046	1.21861
Zerynthia rumina	0.284705	0.343884	-0.15117
Parnassius mnemosyne	0.07593	0.394591	-0.90476
Parnassius apollo	-0.37038	0.743464	-0.39809
Carcharodus lavatherae	0.513588	-0.35221	-0.14008
Carcharodus alceae	0.730874	1.063816	1.785847
Carcharodus floccifera	0.734178	0.144254	0.304687
Carcharodus baeticus	0.665317	0.041932	0.22781
Erynnis tages	0.671323	0.086532	-0.04709
Muschampia proto	0.121673	-0.64123	0.233027
Pyrgus malvae	0.547025	-0.19956	0.04023
Pyrgus serratulae	0.498357	-0.16826	-0.7766
Pyrgus armoricanus	-0.10499	-0.8213	0.233958
Pyrgus onopordi	0.60221	-0.02843	0.655396
Pyrgus alveus	-0.21523	-0.64309	-0.29075
Pyrgus carthami	0.544332	0.134999	-0.25809
Pyrgus centaureae	0.497677	-0.25792	-0.91029
Spialia sertorius	0.540392	-0.10512	0.31679
Heteropterus morpheus	0.592546	0.45234	-0.72407
Carterocephalus palaemon	0.6387	0.093368	-0.93506
Carterocephalus silvicola	0.598977	0.319767	-0.72053
Thymelicus acteon	0.51084	0.532936	-0.44393
Thymelicus lineola	0.467356	0.571315	-0.8831
Thymelicus sylvestris	0.52649	0.449956	-0.43641
Hesperia comma	0.656799	-0.14758	-1.11253
Ochlodes sylvanus	0.301754	0.665364	-0.27419
Gegenes nostrodamus	0.517428	0.597916	1.267741

Appendix 4.8 continued

Species	**RS1**	**RS2**	**RS3**
Aricia cramera	0.63478	-0.44894	1.925672
Aricia montensis	0.704195	-1.32121	-0.08567
Pyrgus cirsii	0.609854	-0.43855	-0.9874
Pyrgus malvoides	0.563106	-0.36038	-0.29325
Iolana debilitata	0.469044	-0.14534	0.404907
Leptidea juvernica	0.307601	0.015551	-0.12101

Appendix 4.7: UPGMA clustering dendrogram of all European butterfly species constructed using hierarchical clustering on the basis of ecological traits. .



Appendix 4.8: UPGMA clustering dendrogram of all species included in the European Butterfly Monitoring Scheme (EBMS) constructed using hierarchical clustering on the basis of ecological traits.