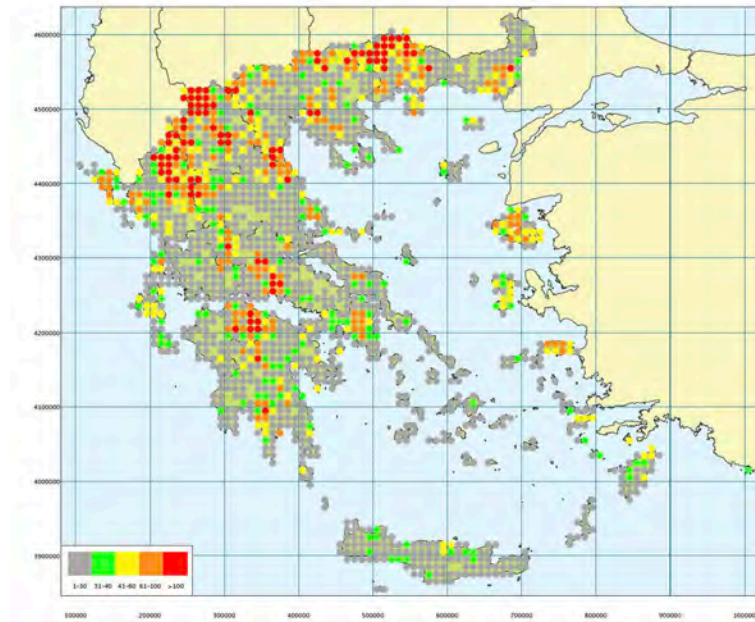


ΟΙ ΠΕΤΑΛΟΥΔΕΣ ΤΗΣ ΕΛΛΑΔΑΣ

Νέοι Χάρτες κατανομής των ειδών 3.3', Νέος Χάρτης 3.4', Νέος Χάρτης 4.15' και Νέος Χάρτης 4.16'
του Λάζαρου Ν. Παμπέρη



GGRS87

THE BUTTERFLIES OF GREECE

New Maps distribution of species 3.3', New Map 3.4', New Chart 4.15' and New Chart 4.16'

by Lazaros N. Pamperis

2023

ΠΡΟΛΟΓΟΣ

Στις επόμενες σελίδες παρουσιάζονται νέοι 236 χάρτες εξάπλωσης των ειδών δηλαδή οι Χάρτες 3.3', νέος Χάρτης 4.15' (ανάλογος αυτόν στην σελίδα 736 της δεύτερης έκδοσης του βιβλίου ΟΙ ΠΕΤΑΛΟΥΔΕΣ ΤΗΣ ΕΛΛΑΔΑΣ, 2009) και νέος Χάρτης 4.16' (στην σελίδα 738).

Οι νέοι αυτοί χάρτες έχουν συντεταγμένες του συστήματος GGRS87 και αφορούν συνολικά τις 1651 τοποθεσίες 10X10 km, που έχουν εξερευνηθεί. Για όλα τα είδη σημειώνεται στους Χάρτες 4.3' η ΑΟΟ (Area Of Occurance, 2X2Km) σε Km², Οι νέοι αυτοί Χάρτες προέρχονται και αυτοί από τις συνολικά 461253 καταγραφές για τις πεταλούδες της Ελλάδας, που συγκεντρώθηκαν μέχρι 31 XII 2022 (αντίστοιχα 265134 καταγραφές, το 2008).

Αυτή η αύξηση των καταγραφών οφείλεται στις προσωπικές εξερευνήσεις (από το 2008-2023) αλλά κυρίως στις δημοσιευμένες εργασίες σε εντομολογικά περιοδικά και στην αποστολή (μετά την δεύτερη έκδοση του βιβλίου) σχολίων και καταγραφών για τις πεταλούδες της Ελλάδας από πολλούς, από την Ελλάδα και το εξωτερικό, των οποίων τα ονόματα αναφέρονται παρακάτω. Σε όσους προσέφεραν τα σχόλια και όσους εμπιστεύθηκαν τις καταγραφές των, αφιερώνεται το παρόν μαζί με την ευγνωμοσύνη μου.

Επισημαίνεται η ανάρτηση πολλών φωτογραφιών και καταγραφών σε ιστοτόπους (μερικές διευθύνσεις των οποίων αναφέρονται παρακάτω) και ιδιαίτερα στην ομάδα του Facebook για τις πεταλούδες της Ελλάδας και της Κύπρου (Butterflies & Moths of Greece & Cyprus με 3952 μέλη την 7 XII 2022) στο <http://www.facebook.com/groups/420659294633829/>.

Τώρα στην Ελλάδα υπάρχουν 236 είδη πεταλούδων σύμφωνα με το Wiemers et al (2018) στο <https://doi.org/10.3897/zookeys.811.28712> και στο και το Zhang et al (2020) στο <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8018707/>

Σε ωρισμένες από τις σελίδες παρουσιάζονται, κατά περίπτωση εάν απαιτείται, και πρόσθετα διευκρινιστικά σχόλια και σύνδεσμοι (Links) για ιστοσελίδες με φωτογραφίες και λεπτομέρειες των φτερών, που προτείνονται ως χρήσιμες για αναγνώριση των ειδών με τις φωτογραφίες.

Για επιπλέον 165 νέες φωτογραφίες και περισσότερες λεπτομέρειες στο URL: <https://www.pamperis.gr> και στις 6 ελεύθερες εφαρμογές στο https://www.pamperis.gr/btf_site/ και στο <https://www.pamperis.gr/recognition/index.html> για την αυτόματη αναγνώριση των πεταλούδων.

PREFACE

The new Maps 3.3' (of distribution of species) are presented, the new Map 4.15' (as in the page 736 of the second edition of the book THE BUTTERFLIES OF GREECE, 2009) and the new Chart 4.16' (as in page 738).

The new Maps are made with coordinates in GGRS87, after in total 461253 records for the butterflies of Greece (till 31 XII 2022) for the 1651 investigated localities 10X10 km (compare to 265134 records, in 2008). For all species AOO (Area Of Occupancy 2X2Km) is noted on Maps 3.3' in Km².

This increase in records is made after personal investigations (from 2008-2023) and mainly after the many published papers in entomological magazines and the generous offer from many recorders (listed below) from Greece and abroad, who send comments and records for the butterflies of Greece. This update is dedicated to all those who offer their comments and send and trust to me their records; to all I express my gratitude.

A list with a number of sites (from which records for the butterflies of Greece were obtained) is presented; the existence of a group in Facebook for the Butterflies and Moths of Greece and Cyprus is also noted (with 3952 members at 7 XII 2022) in <http://www.facebook.com/groups/420659294633829/>.

Now there are 236 species in Greece; see in Wiemers et al (2018) in <https://doi.org/10.3897/zookeys.811.28712> and in Zhang et al (2020) in <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8018707/>

Additional comments are noted in some of the pages; also there are Links to web pages with photos and details of the wings, suggested for a correct identification from photos.

For 165 new photographs, 6 free applications and more details see in URL: <https://www.pamperis.gr> and in https://www.pamperis.gr/btf_site/ and in <https://www.pamperis.gr/recognition/index.html> for automatic recognition of butterflies.

Larissa 1 January 2023

Lazaros N. Pamperis

**SELECTED SITES FROM WHICH DATA FOR THE BUTTERFLIES OF GREECE WERE OBTAINED
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ΠΕΤΑΛΟΥΔΕΣ ΤΗΣ ΕΛΛΑΔΑΣ**

FLICKR <http://www.flickr.com>

Butterflies & Moths of Palaearctic Regions <http://www.euroleps.ch>

EUROPEAN INTERESTS GROUP <https://butterfly-conservation.org/in-your-area/european-interests-group>

FACEBOOK Butterflies & Moths of Greece & Cyprus <http://www.facebook.com/groups/420659294633829/>

GREENWINGS <http://greenwings.co/>

HOME OF EUROBUTTERFLIES <http://www.eurobutterflies.com>

HONEYGUIDE TOURS <http://www.honeyguide.co.uk/>

iNaturalist <https://www.inaturalist.org>

LEPIFORUM <http://www.lepiforum.de/>

NATURALIST <http://www.naturalist.co.uk>

NATURE LINK www.geocities.com/pelionnature/

NATURETREK <https://www.naturetrek.co.uk/>

OBSERVATION <https://observation.org/>

PROJECT NOAH <https://www.projectnoah.org/>

pyrgus.de http://www.pyrgus.de/index_en.php

SPARTIA WILDLIFE <http://www.spatiawildlife.com/>

ΔΙΚΤΥΟ ΕΡΕΥΝΗΤΩΝ ΠΕΡΙΒΑΛΛΟΝΤΟΣ <http://62.38.203.210/natura/>

ΘΡΑΚΙΚΟΣ ΗΛΕΚΤΡΟΝΙΚΟΣ ΘΗΣΑΥΡΟΣ <http://www.xanthi.ilsp.gr/>

ΜΟΥΣΕΙΟ ΓΟΥΛΑΝΔΡΗ ΦΥΣΙΚΗΣ ΙΣΤΟΡΙΑΣ <http://www.gnhm.gr/>

BUTTERFLIES of Crete <https://butterfliesofcrete.com>

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ΠΡΟΣΩΠΙΚΕΣ ΕΠΙΚΟΙΝΩΝΕΙΕΣ PERSONAL COMMUNICATIONS

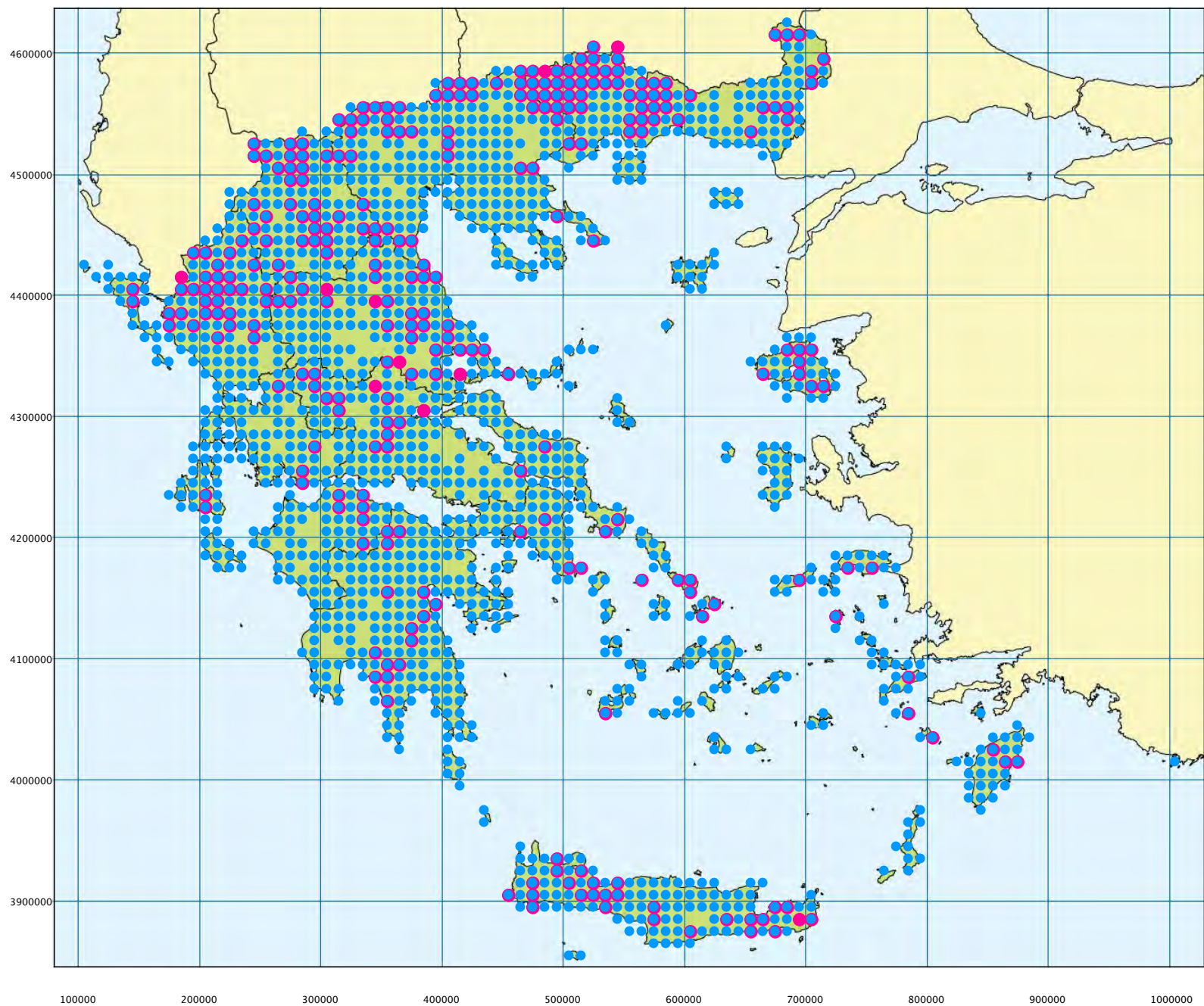
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ΧΑΤΖΗΔΑΚΗΣ ΠΑΝΑΓΙΩΤΗΣ Ι
ΧΡΙΣΤΟΠΟΥΛΟΥ ΜΑΙΡΗ
ΧΡΙΣΤΟΦΙΔΗΣ ΓΙΑΝΝΗΣ
ΨΑΛΛΙΔΑΣ ΒΑΣΙΛΗΣ
ALBRECHT MARTIN
BAUDRAZ MICHEL
BEAUSKOMP PETER C
BERRY MATT
BESHKON STOYAN
BONETTI ANDREA
BOWERS JOHN K
BOZANO GIAN
BROWN JOHN
BURRETT PETER
BYGATE PETER
CARPENTER ALAN
CHAULIAC ANDRE
COBB CHRIS
COUPE J.
COURCY WILLIAMS MICHAEL
COWAN PAUL
CREPIN M.P
CUVELIER SYLVAIN
DAHL MAGNUS
DARCÉMONT CHRISTIAN
DIJON CATHERINE
DINCĂ VLAD
DOWDING JULIAN

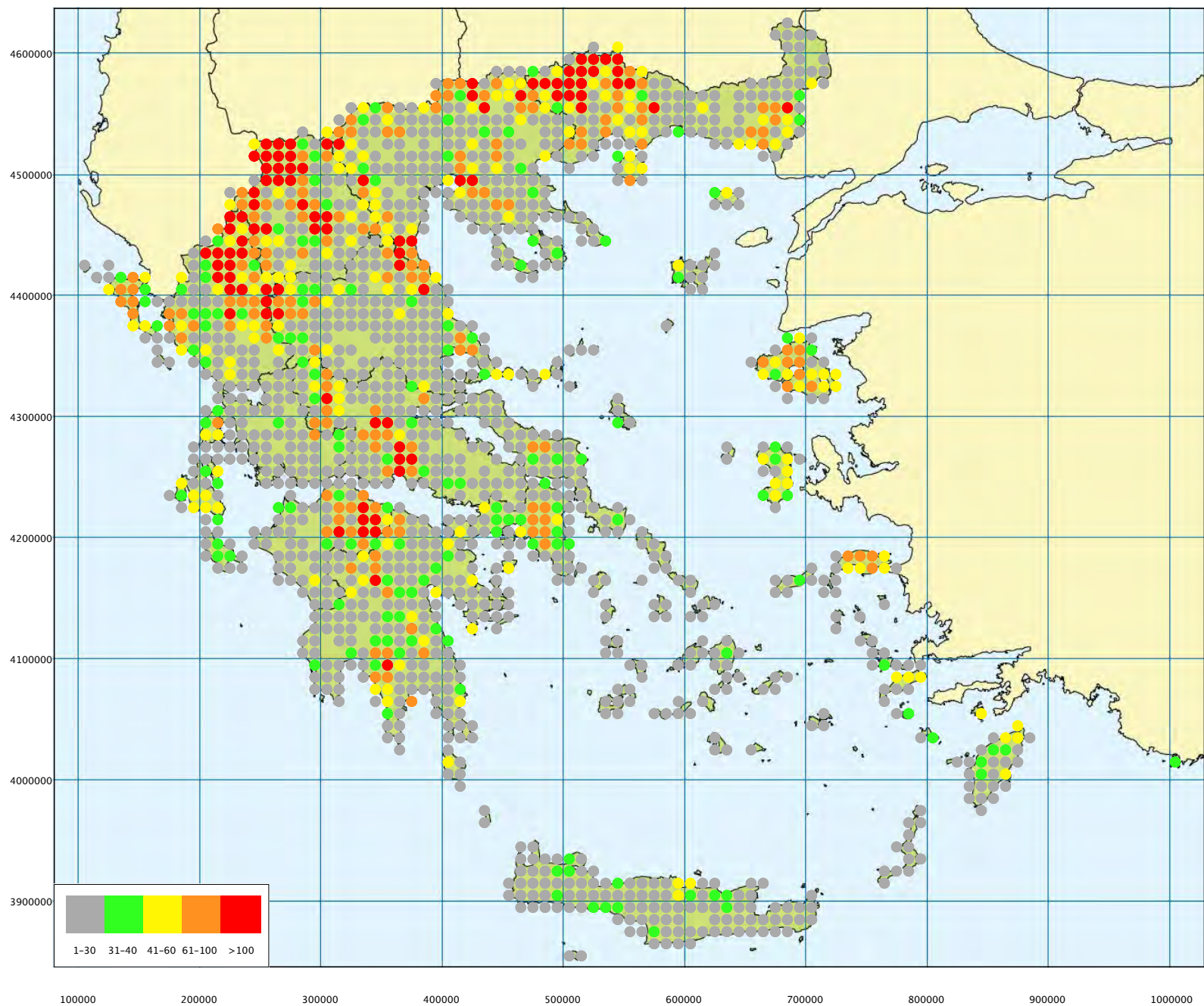
DROUET ERIC
DUDLEY STEVE
DURDIN CHRIS
EDDIE JOHN
EDMUNDS HENRY. A
ELLIS SAM
FENN PATRICIA
FOLEY MICHAEL
FOWLES ANDRIAN P.
FOX KIM
FOX RITCHARD
FULLER MICHAEL
GATTI FRANCESCO
GIBSON CHRIS
GODDARD DAVID
GOETHALS VALERIE
GREATOREX-DAVIES NICK
GUILFOYLE A.
HAATELA TARI
HABELER HEINZ
HALL D
HAPKA TAMAS
HEAP JOHN
HULL MIKE
HUNT PETER
JORDAN JAN
JUTZELER DAVID
KAPPES EVA
KAPPES WULF
KOLEV ZDRAVKO
LAFRANCHIS TRISTAN
MAIER MARIO
MAJER JINDRICH
MANDZIEJEWICZ R.
MANN JOHN
MASON STEPHEN A
MAUNDER MIKE
MAZZEI PAOLO
MEREDITH GUY
MOORE DAVID
MURPHEY CHRIS
MOLGAARD MORTEN S
NABBE MARINA
NORBERT ULMAN
OISTEIN BERG
PALMI PAOLO
PEACE NIGEL
PERKINS ROGER
PETTERSSON LARS
PLOWMAN FRANCIS
PLOWMANE DAVE
POOT ROB
PRENTICE MIKE
PRINGLE GORDON
RAMEL GORDON
RAVIGLIONE MARIO
REYNOLDS W.J
RODGERS PETER
ROWLINGS MATTHEW
RUSSELL PETER
RUTHERFORD JAN
SALMON JOHN
SAVAGE LYNDON

SCARLAU ASTRID
SCHAIDER PAUL
SEEPMA HERRE
SELBY PAUL
SIOUX LEFTY
SMETHURST MIKE
SPENCER SIMON
SPEYBROEK JEROEN
SPILLER JOY
SPRUYTTE STEF
STANDRING KEVIN
STANLEY G. A.
STEUR JOEP
STUBGAARD JORGEN
SUTTON PETER
SVELKUTIS MICK
SZEKELY LEVENTE
TAYLOR MIKE
THOMPSON NEIL
THOMSON G.
THORSEN NIELS
TOLMAN TOM
TOWNSEND DENIS
TSHIKOLOVETS VADIM
ULMAN NORBERT
van DOG JOHANNES
van HANS OOSTERHOUT
van SWAAY CHRIS
VEROVNIK RUDI
VLIEGENTHART ALBERT
WAGENER SIGBERT P.
WATTS BERNARD
WICKMAN PER-OLOF
WIRTH ALEXANDER
WRIGHT DAVE
WYNNE IAN R
ZIEGLER HEINER



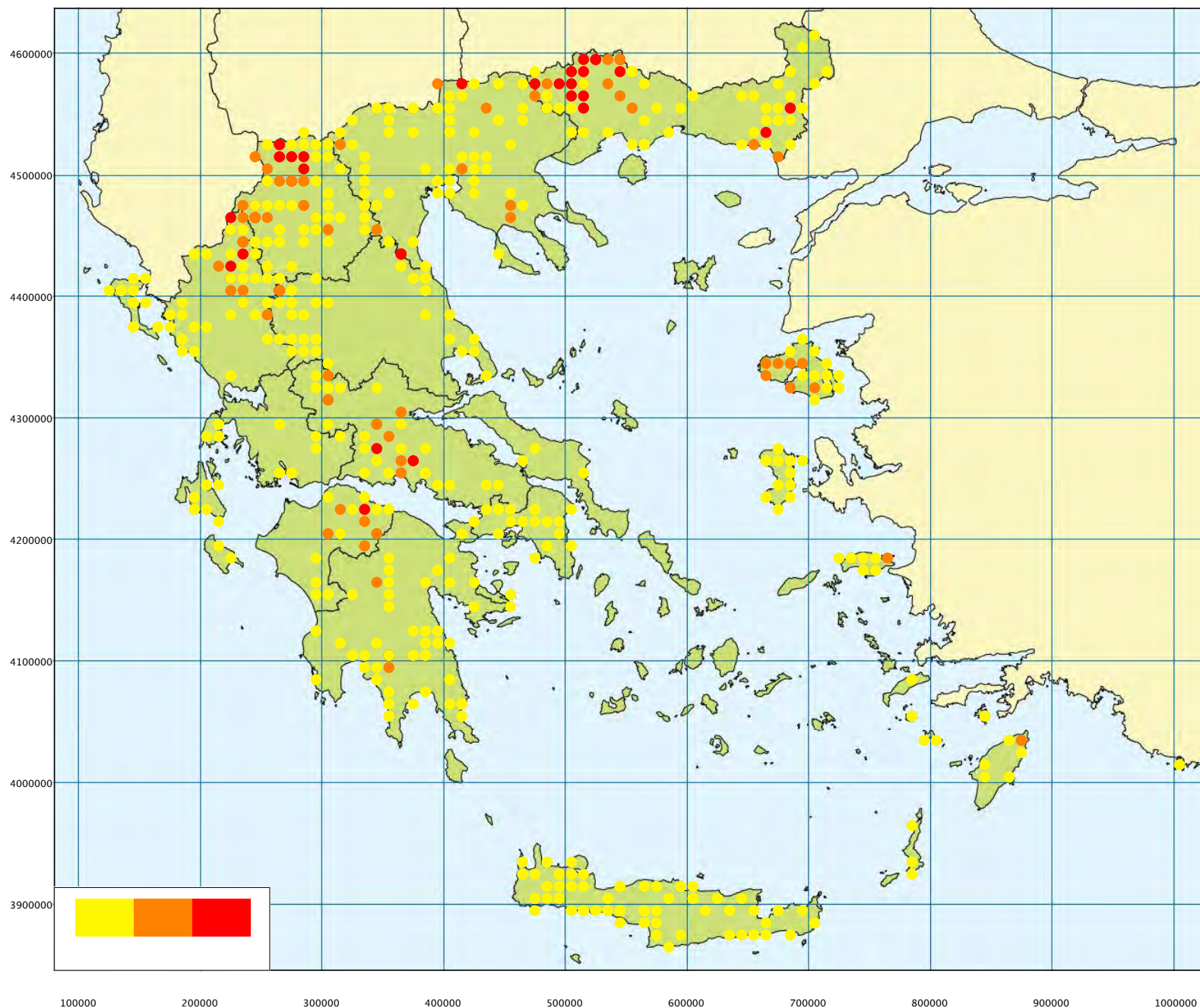
New Map 3.4'
(update 2023)
The investigated localities
for all species

Νέος Χάρτης 3.4'
(επικαιροποίηση 2023)
Οι εξερευνηθείσες τοποθεσίες για
όλα τα είδη



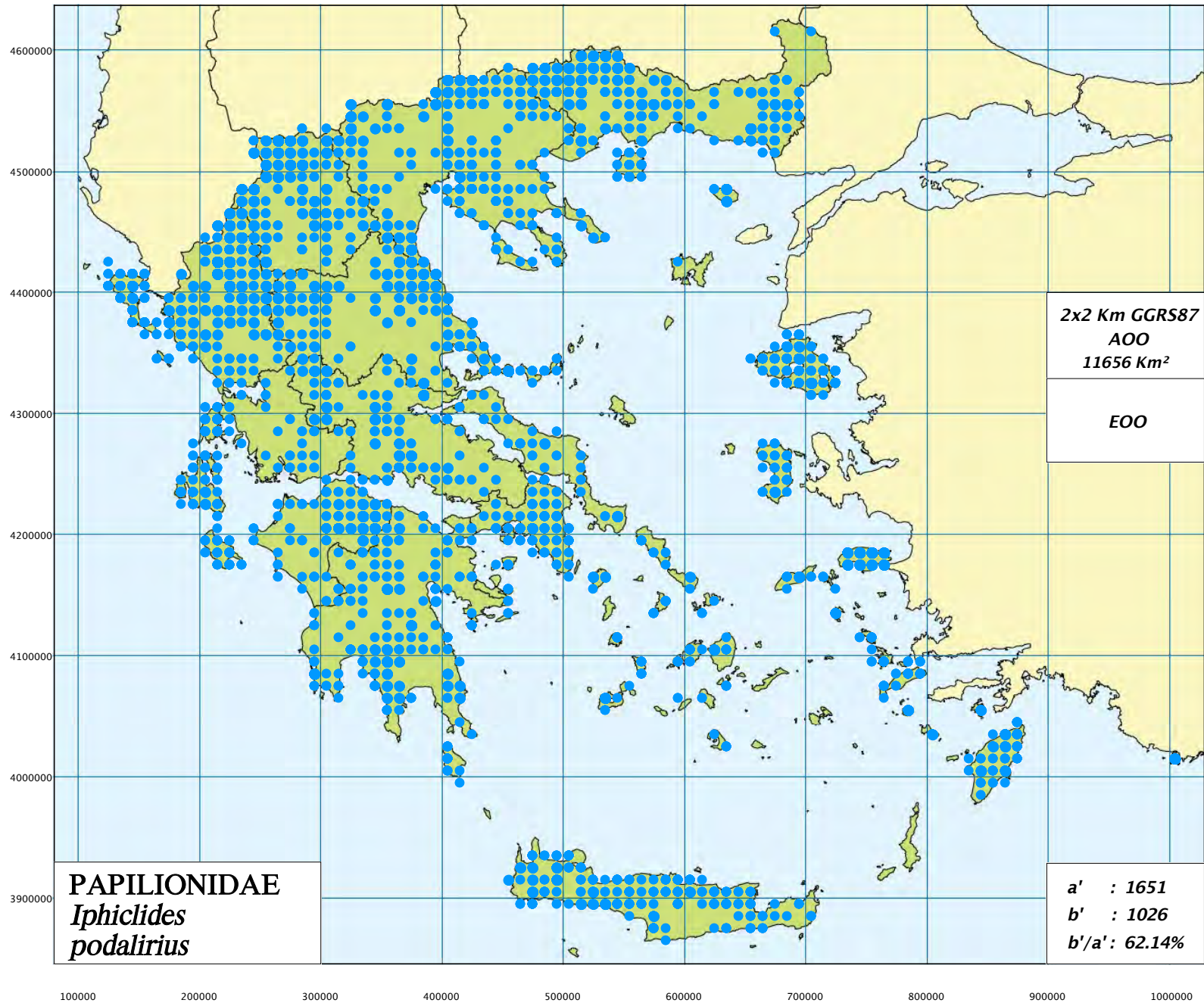
New Chart 4.15'
 (update 2023 version in GGRS87) Total
 number of species for all 1651
 localities 10X10 km

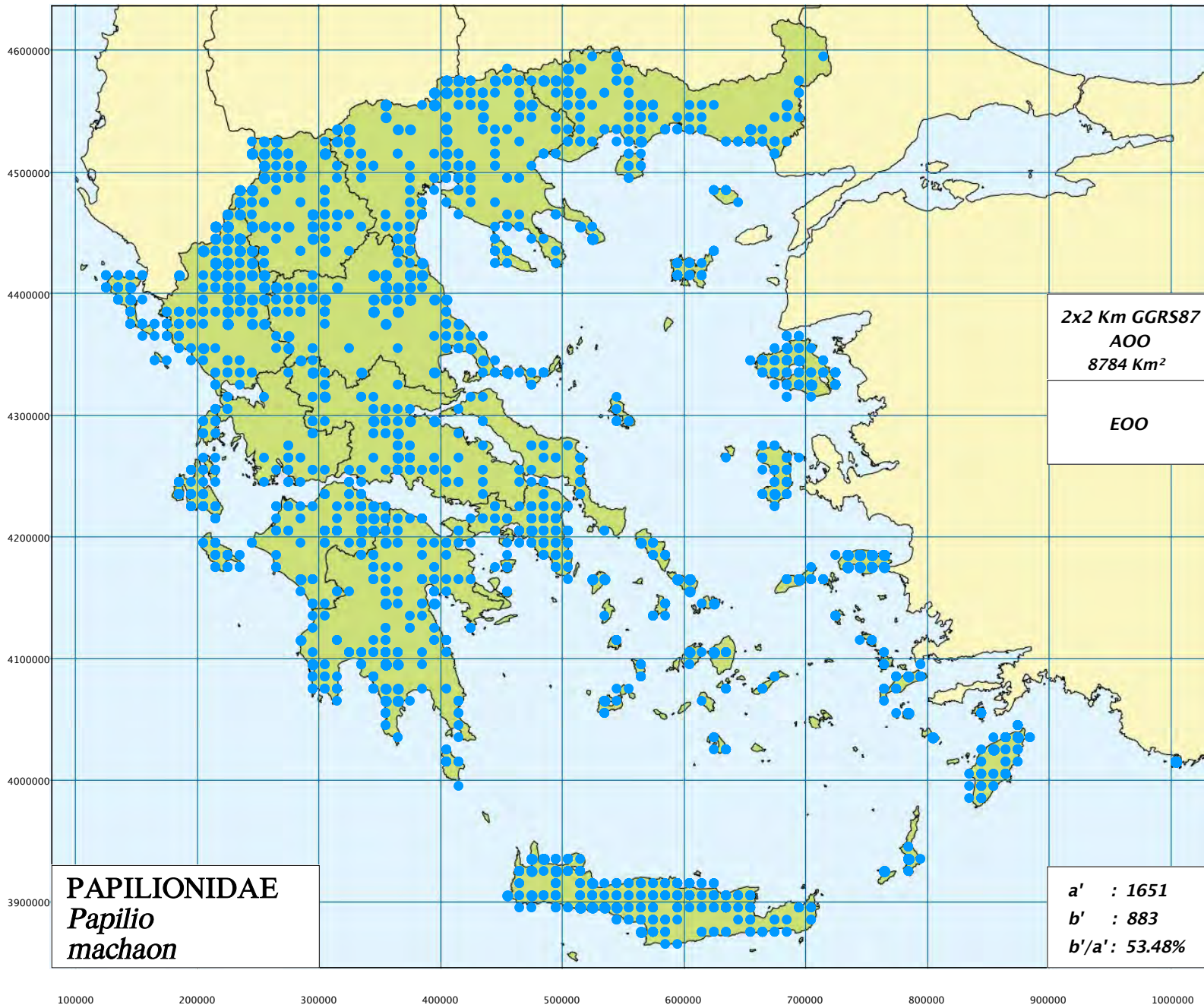
Νέος Χάρτης 4.15'
 (επικαιροποίηση 2023 με
 συντεταγμένες GGRS87) Συνολικός
 αριθμός των ειδών για όλες τις 1651
 τοποθεσίες 10X10 km

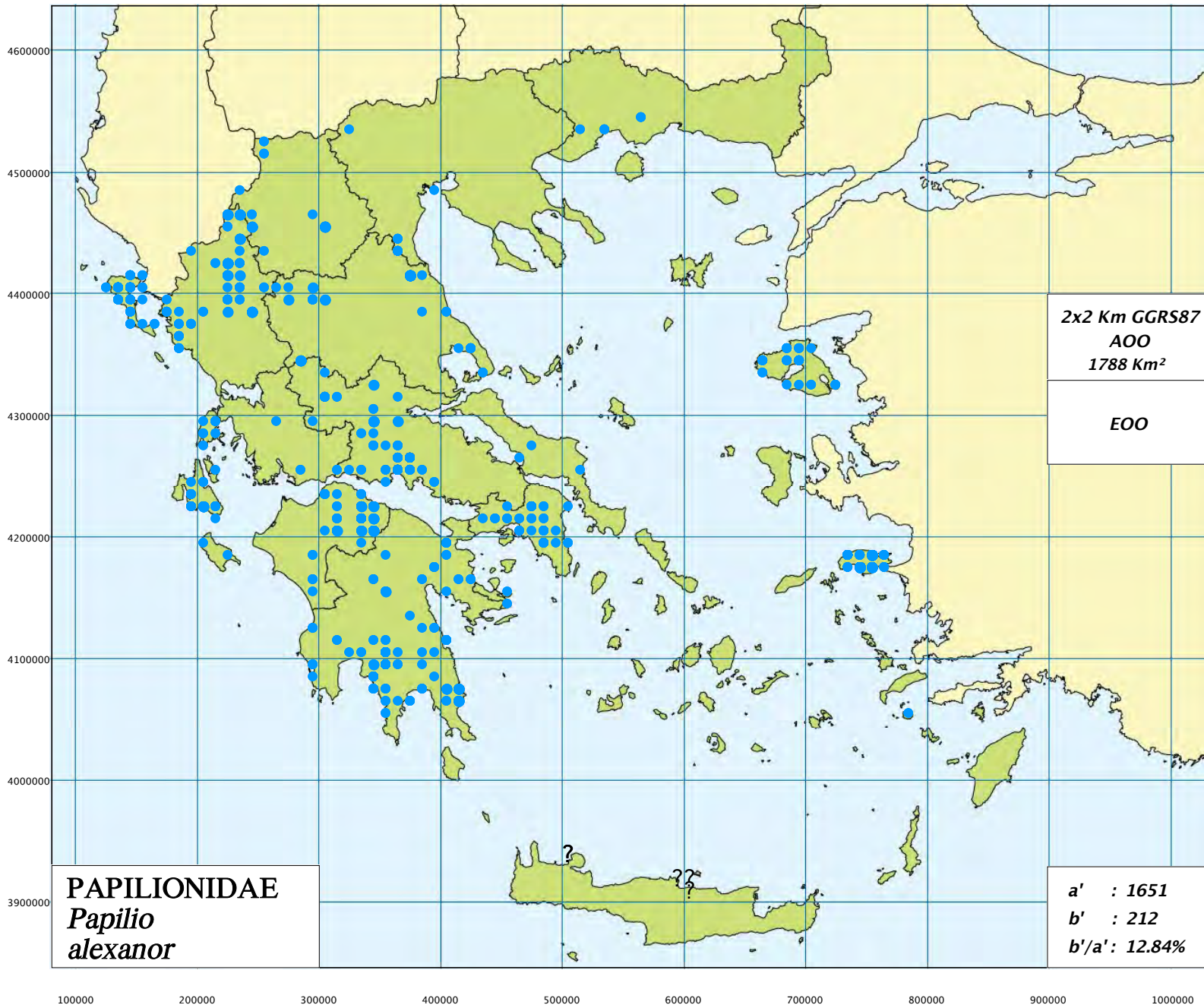


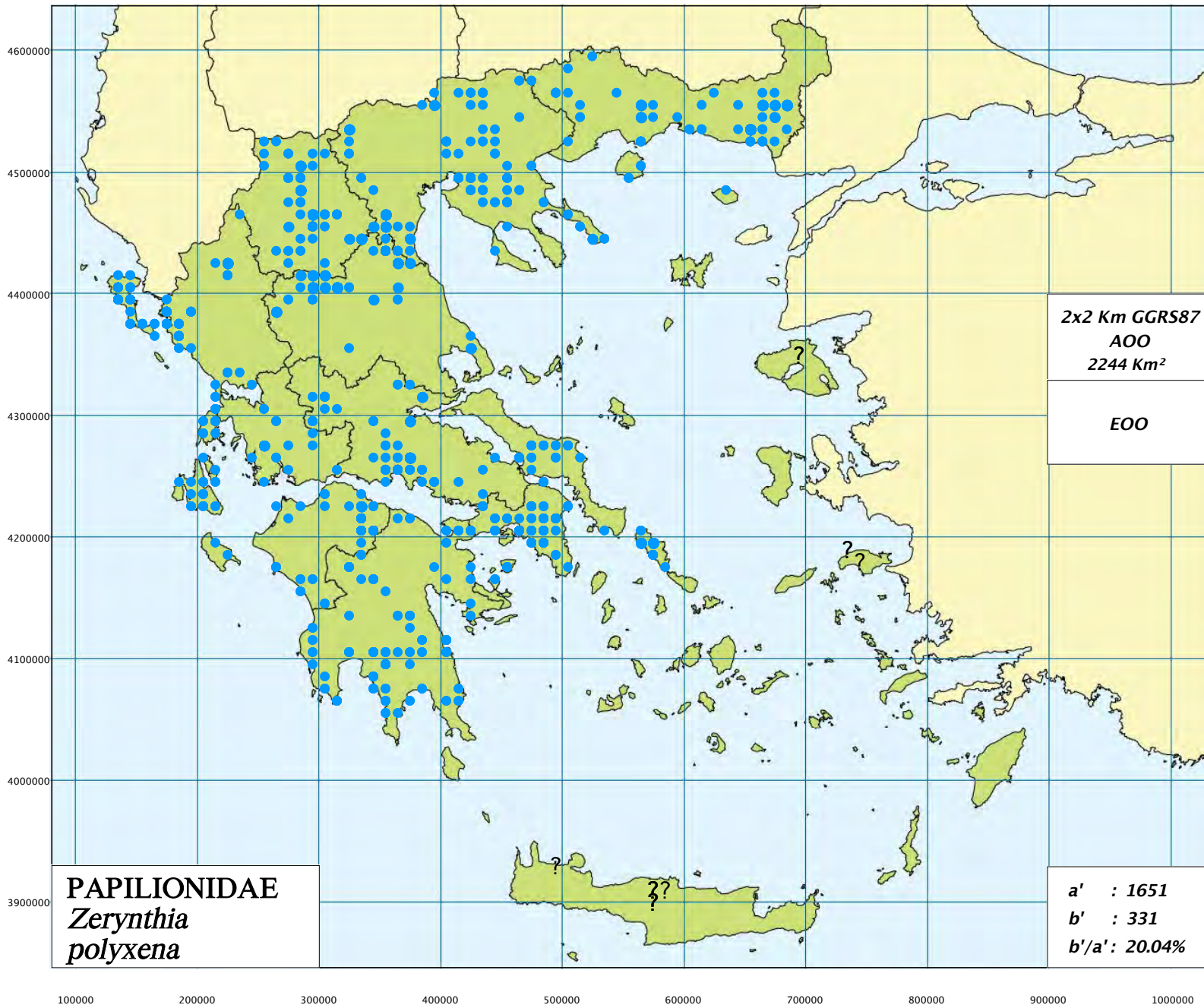
New Chart 4.16'
 (update 2023 version in GGRS87)
 Important butterfly areas in Greece

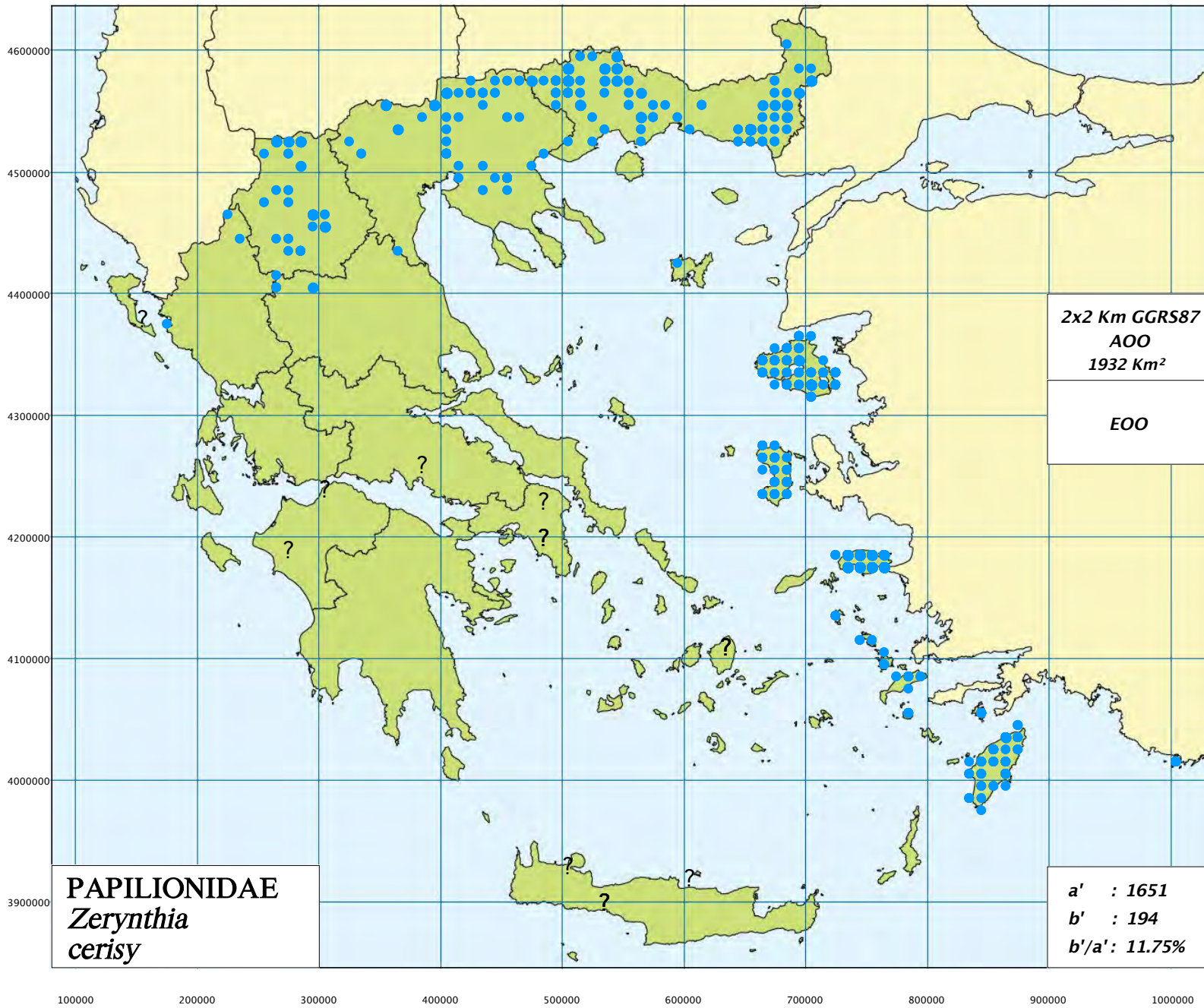
Νέος Χάρτης 4.16'
 (επικαιροποίηση 2023 με
 συντεταγμένες GGRS87) Σημαντικές
 περιοχές για τις πεταλούδες της
 Ελλάδας





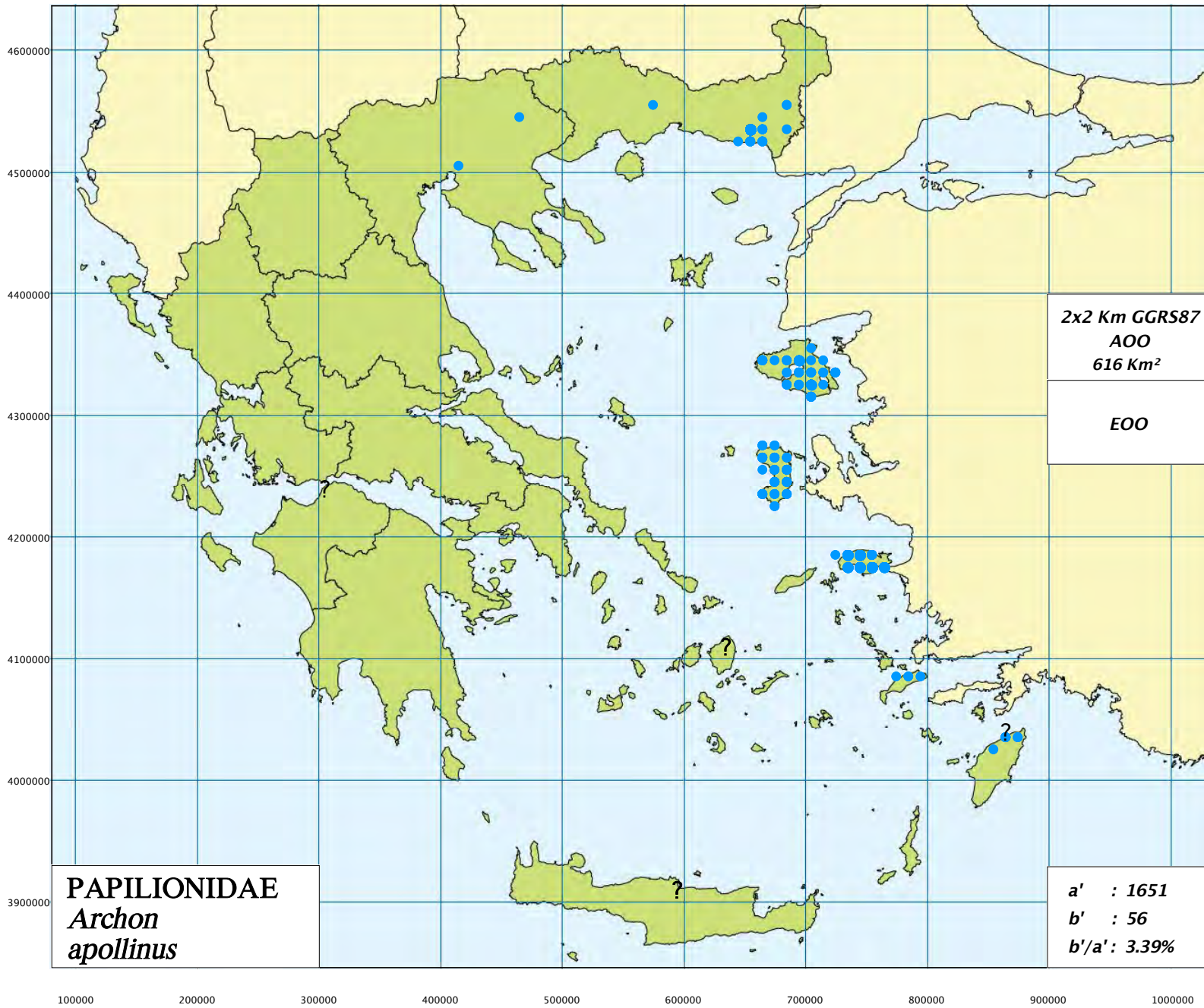


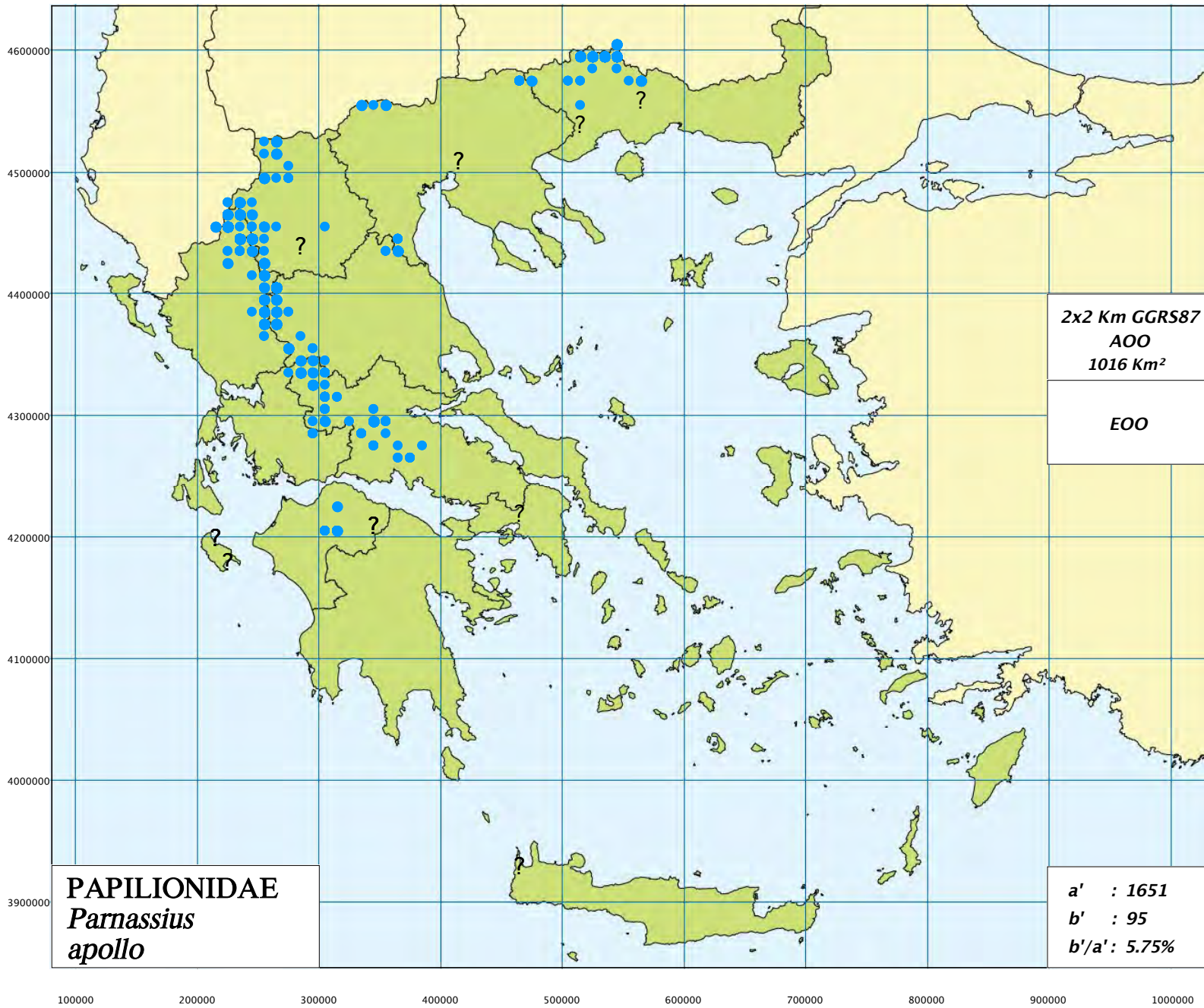


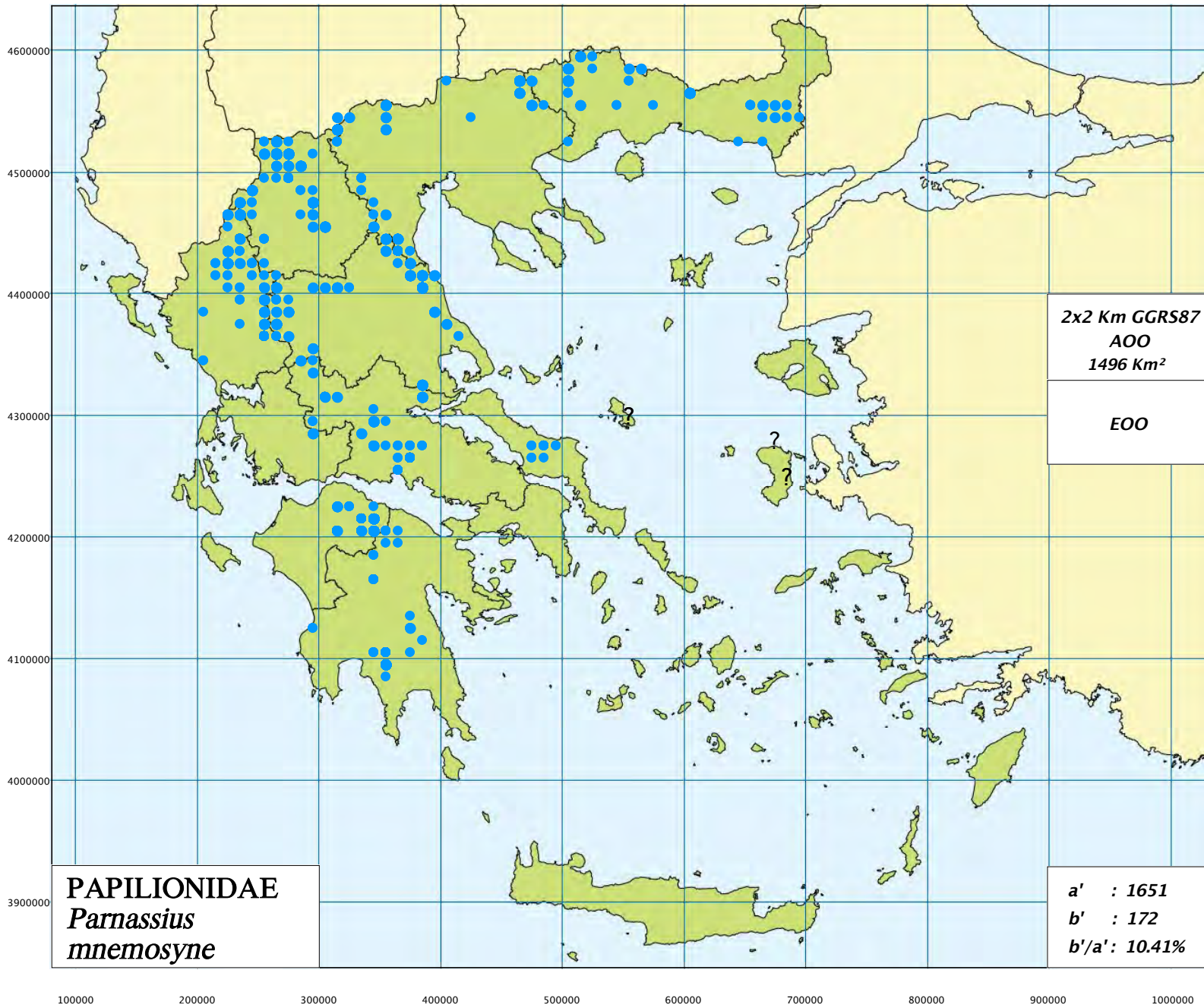


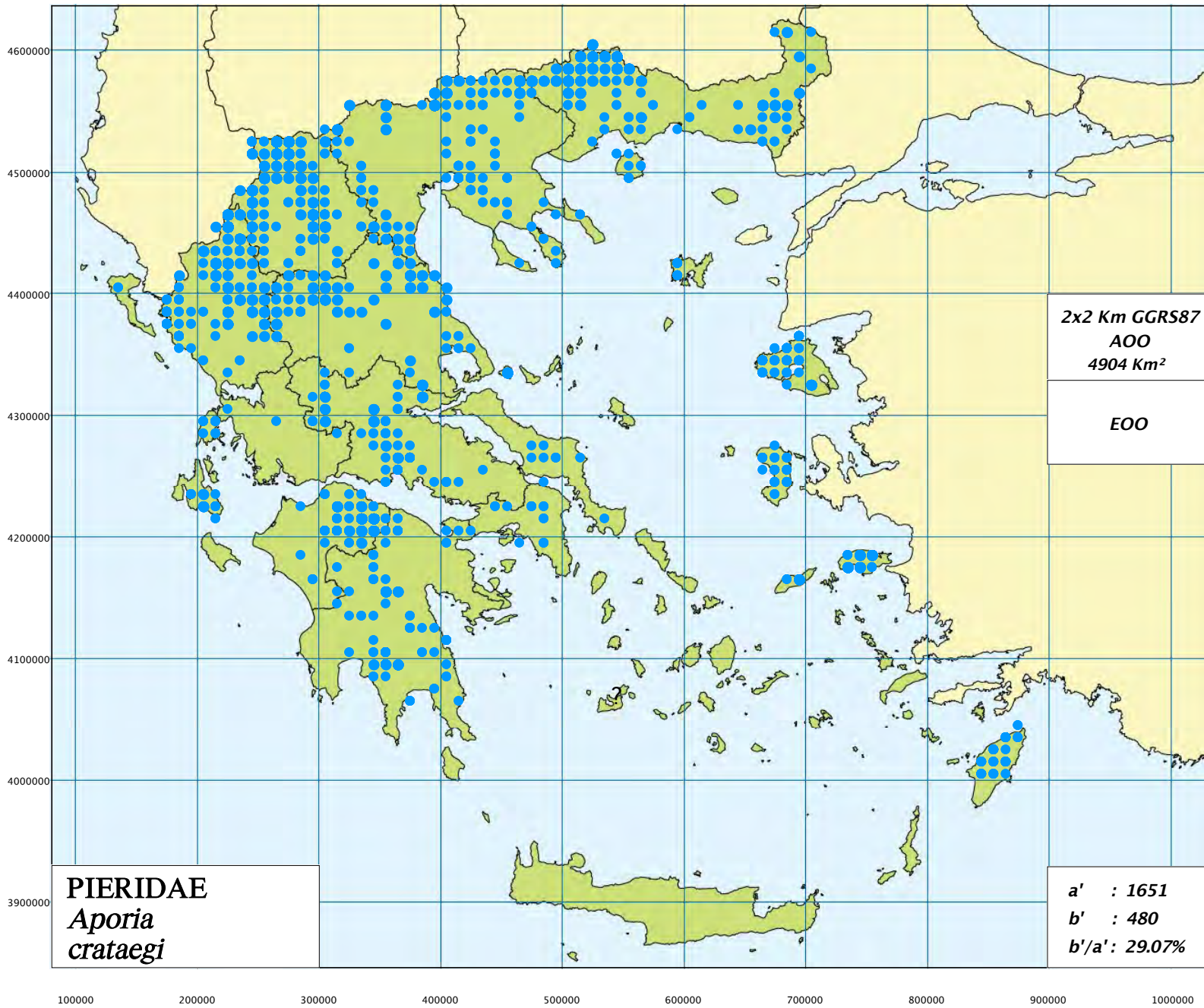
**ΕΝΔΗΜΙΚΟ ΕΙΔΟΣ ΤΗΣ ΕΛΛΑΔΑΣ
ENDEMIC SPECIES OF GREECE**

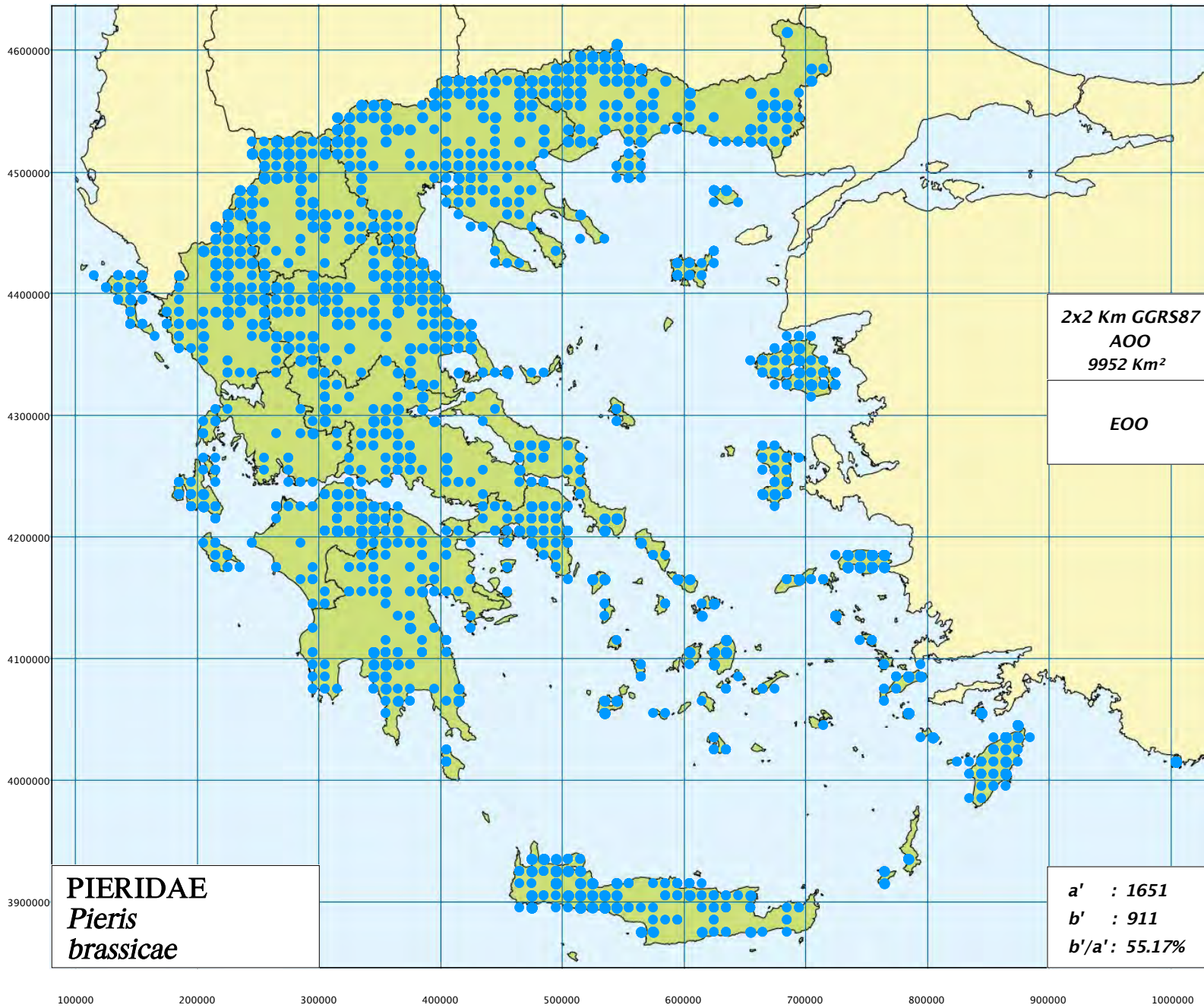


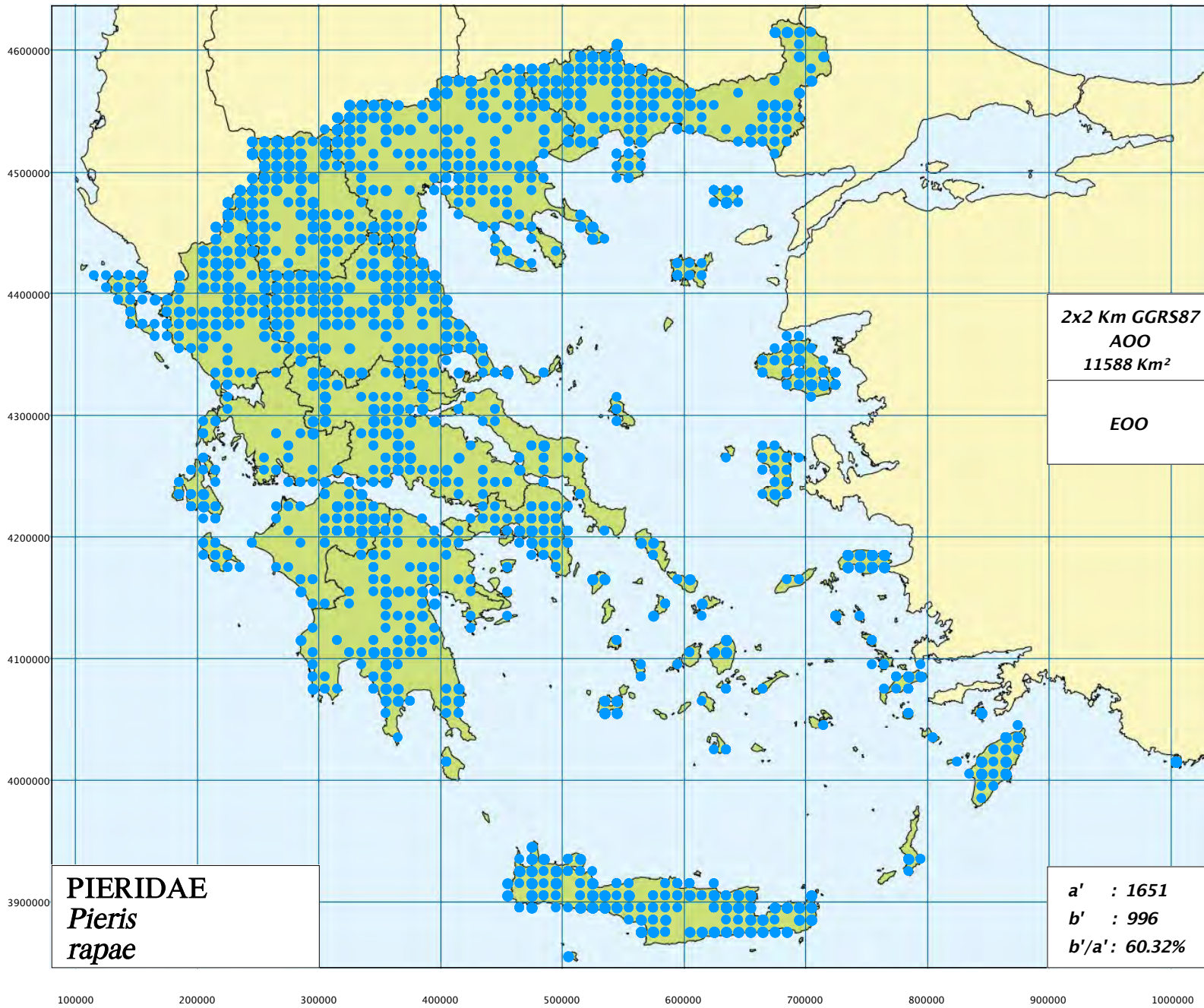


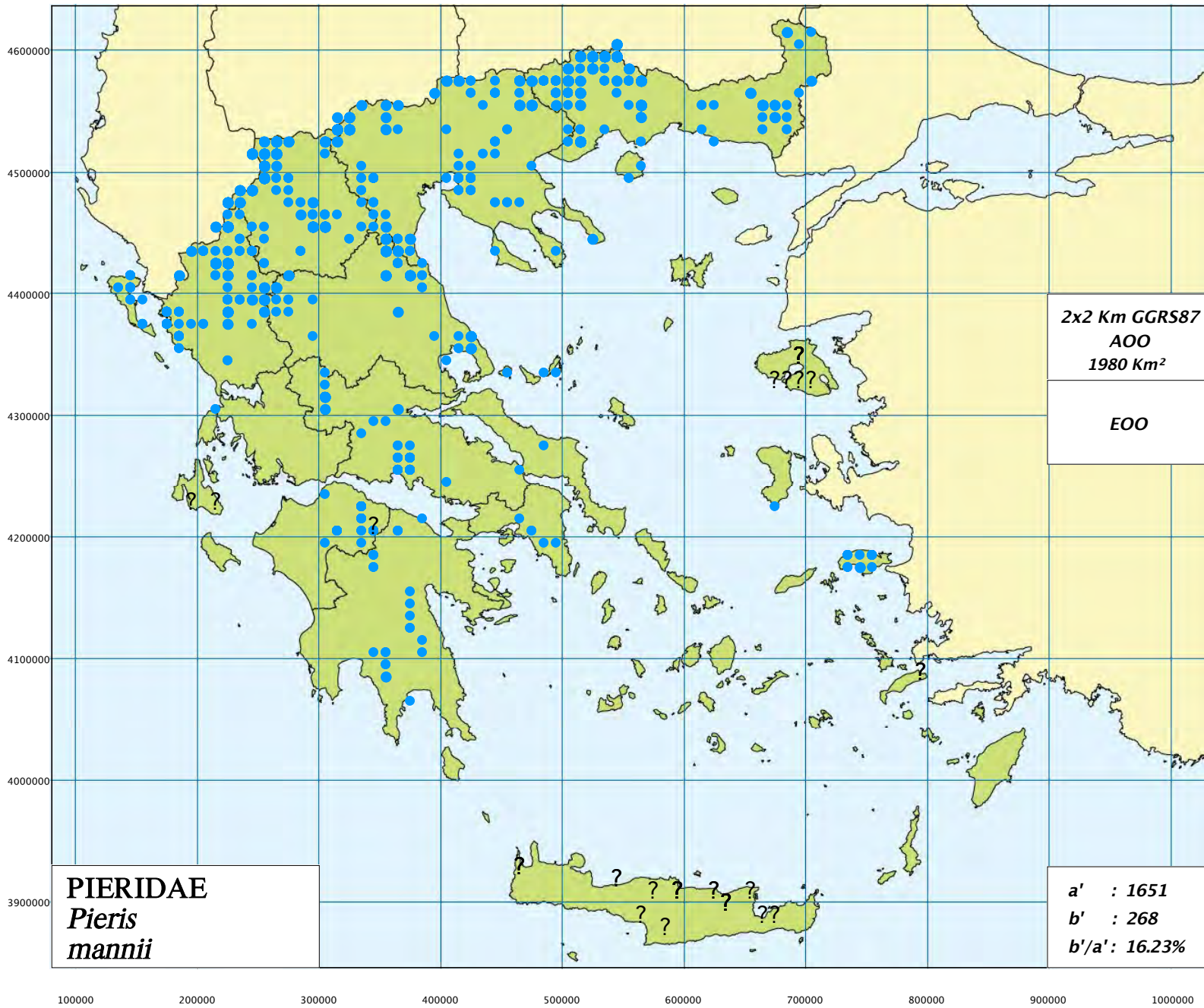










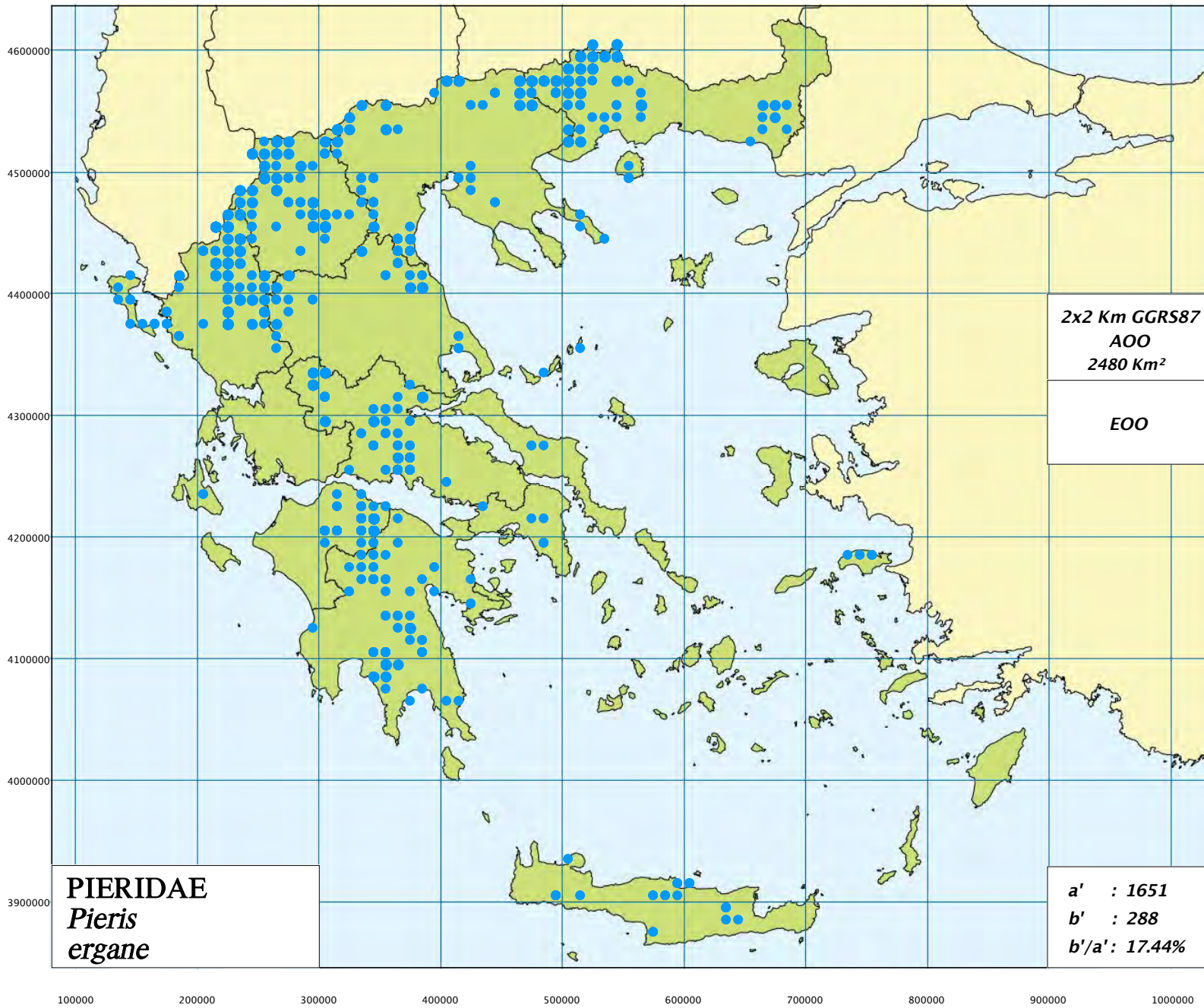


PIERIDAE
Pieris
manni

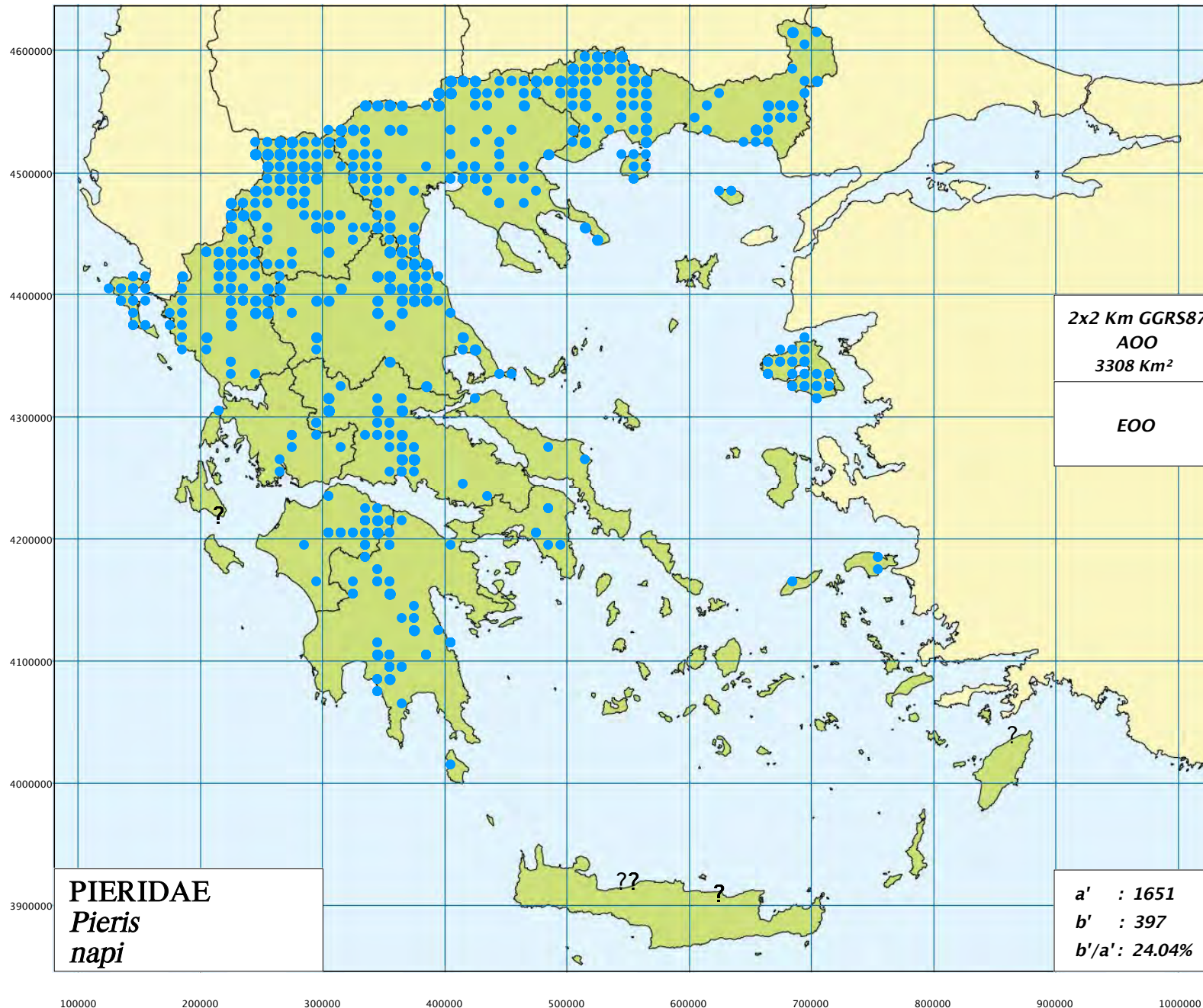
2x2 Km GGRS87
 AOO
 1980 Km²

EOO

a' : 1651
 b' : 268
 b'/a' : 16.23%



Αμφίβολη αναγνώριση /
Identification Uncertain

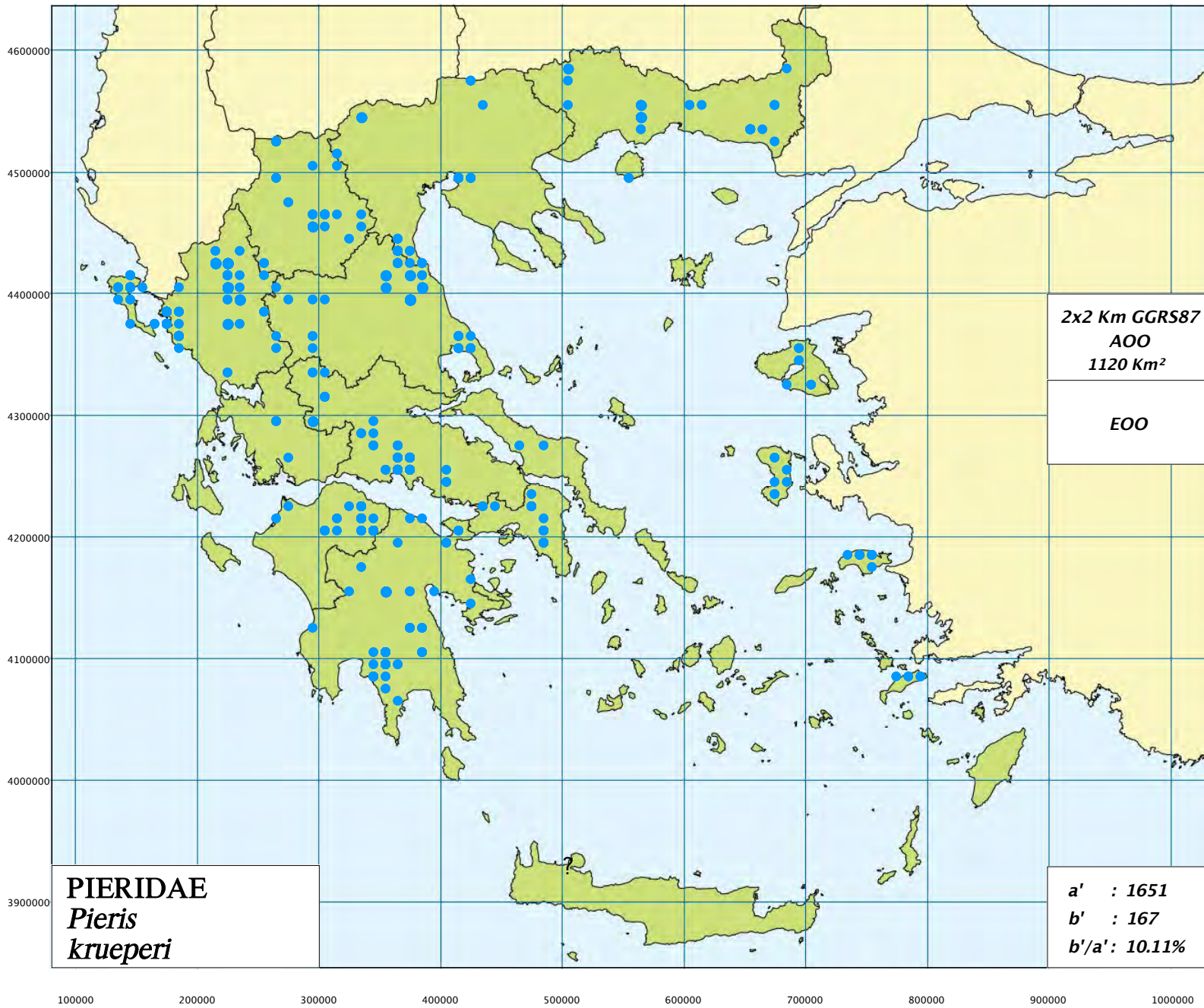


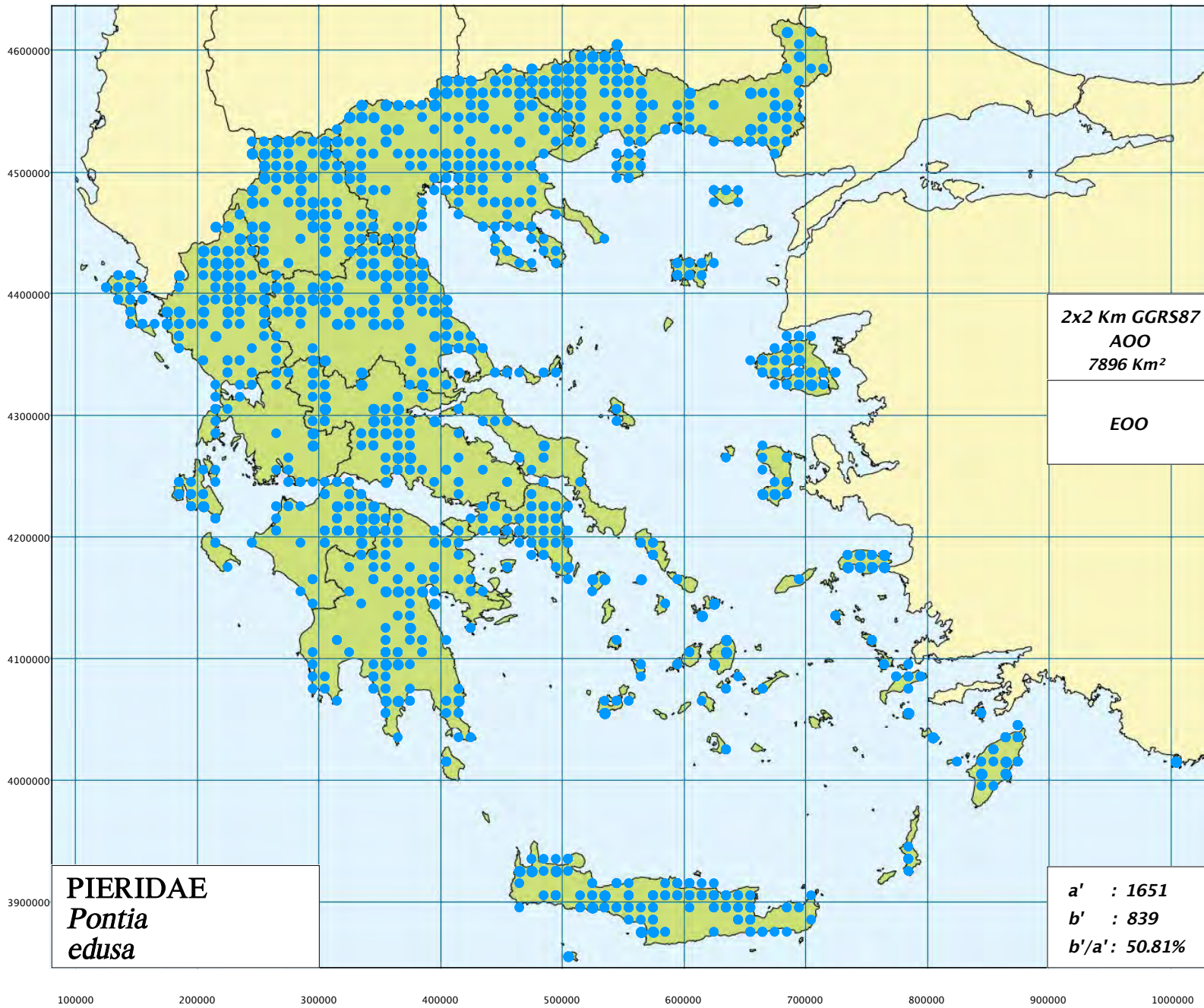
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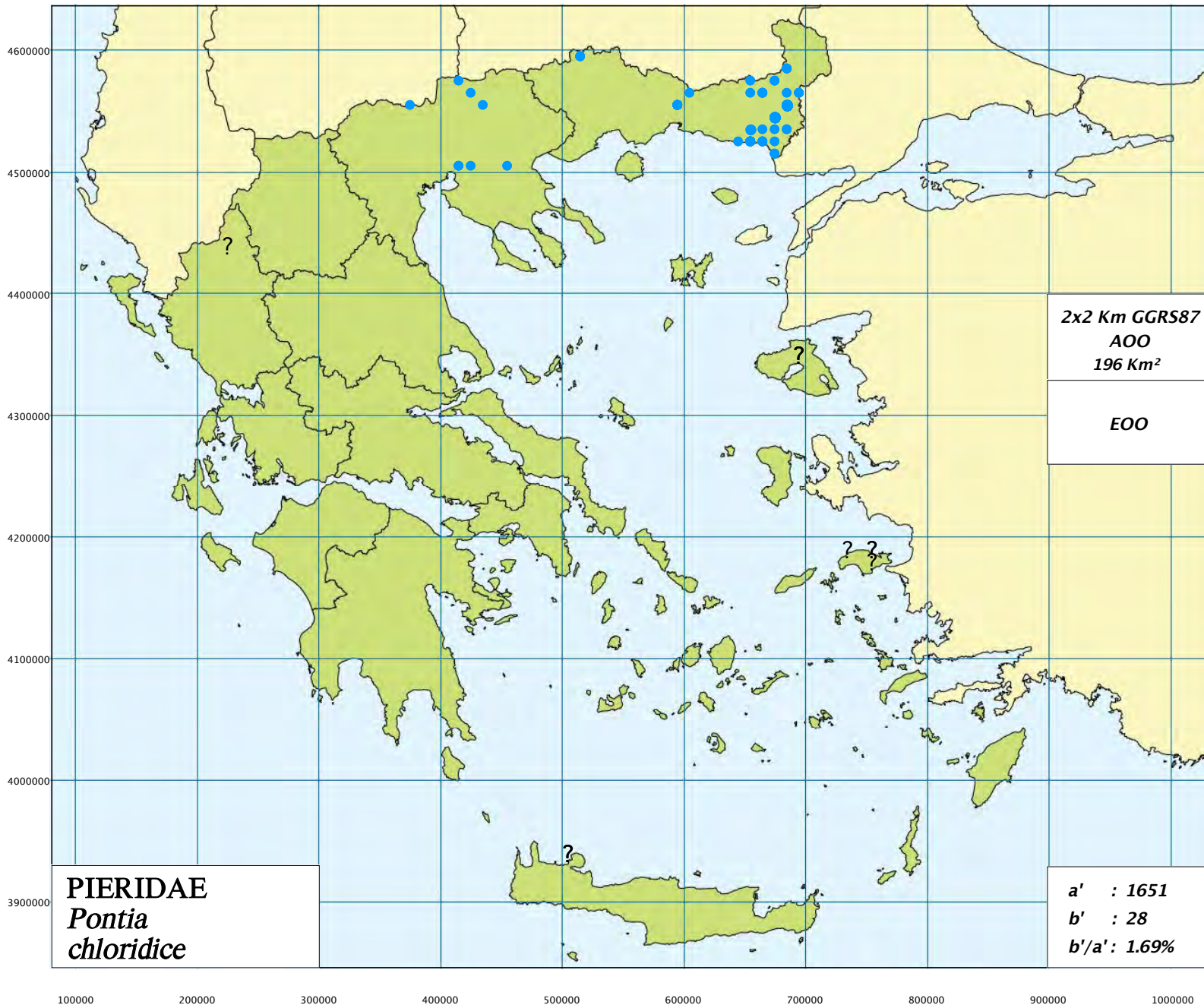
Αμφίβολη αναγνώριση /
Identification Uncertain

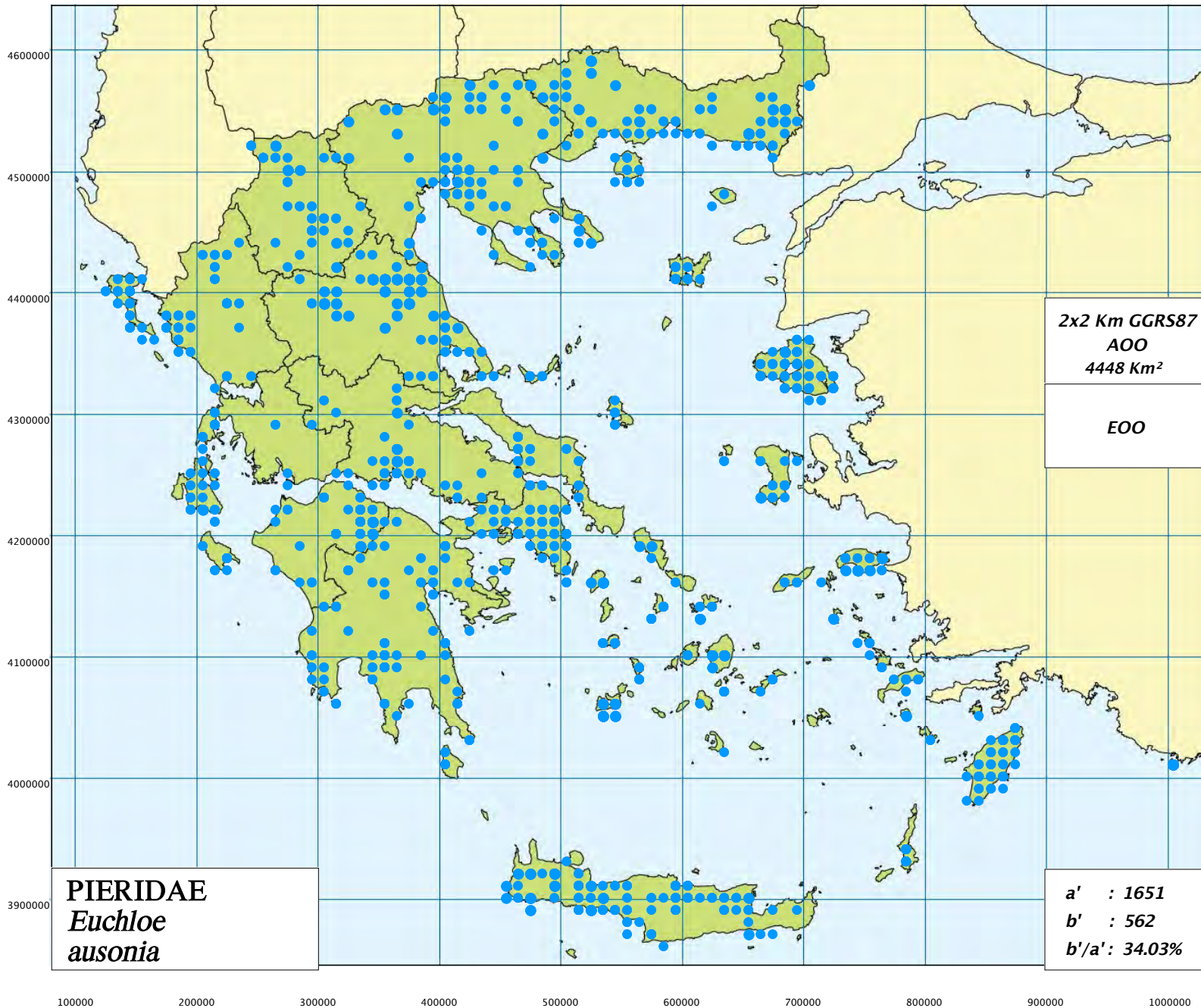


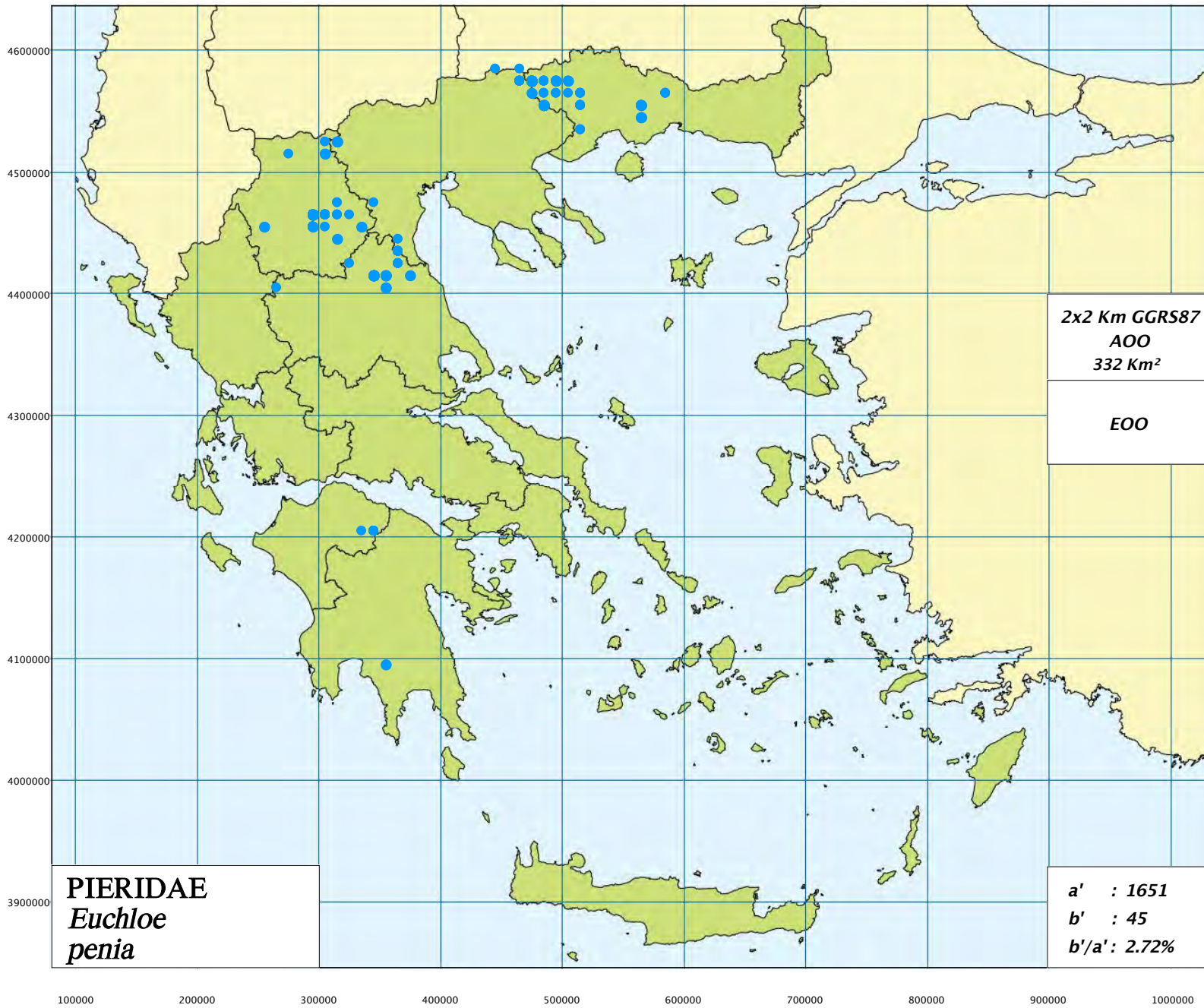
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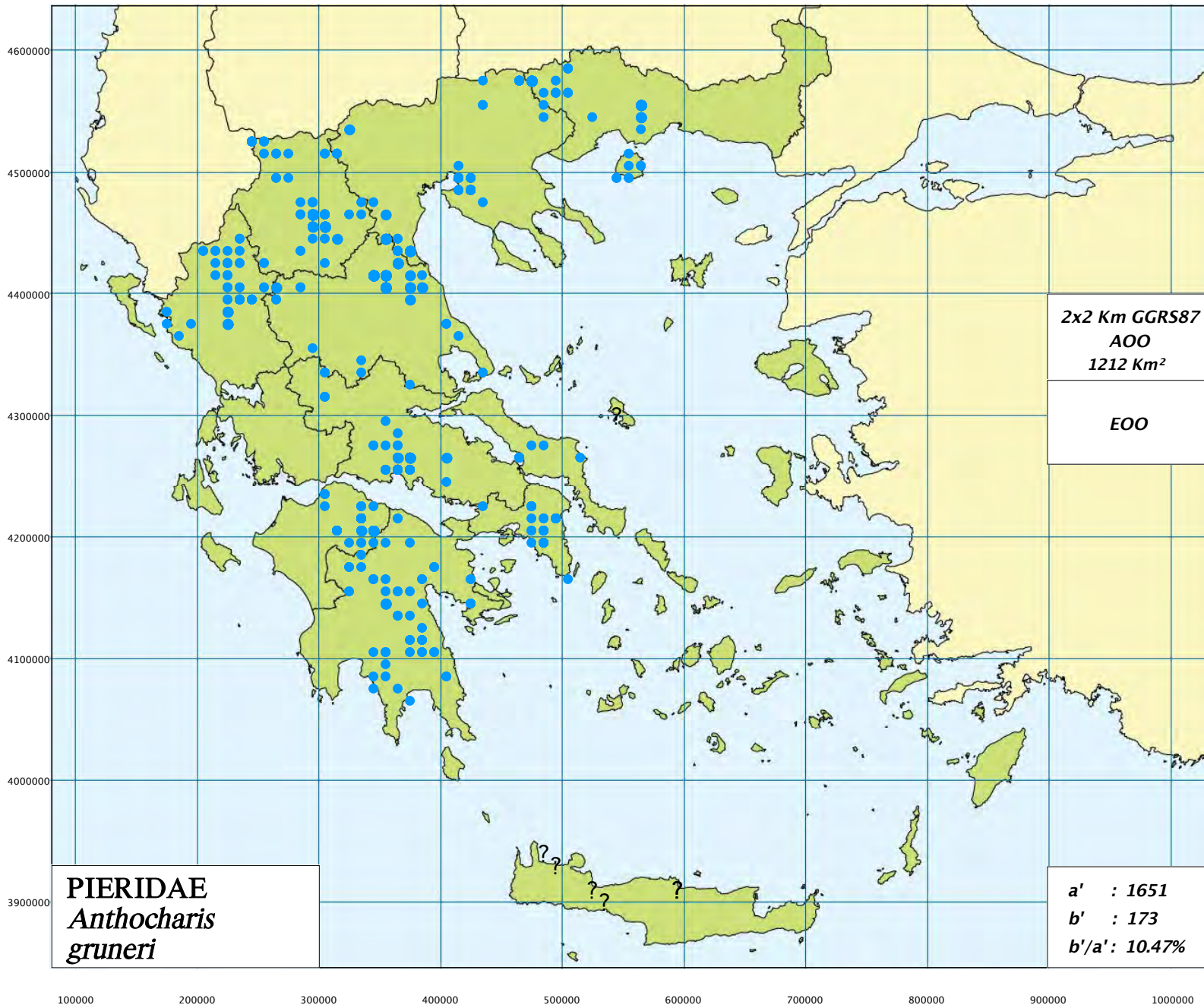


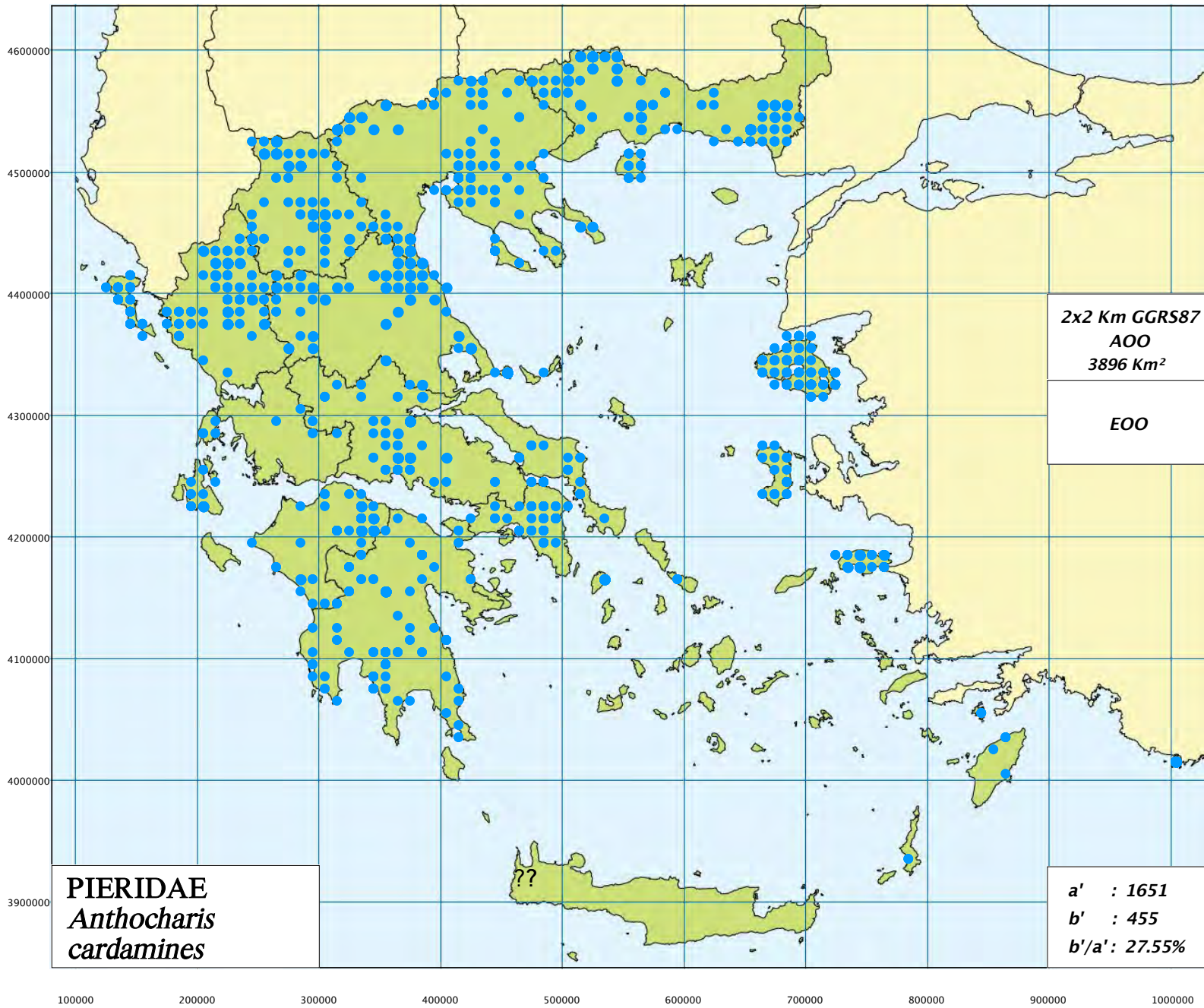


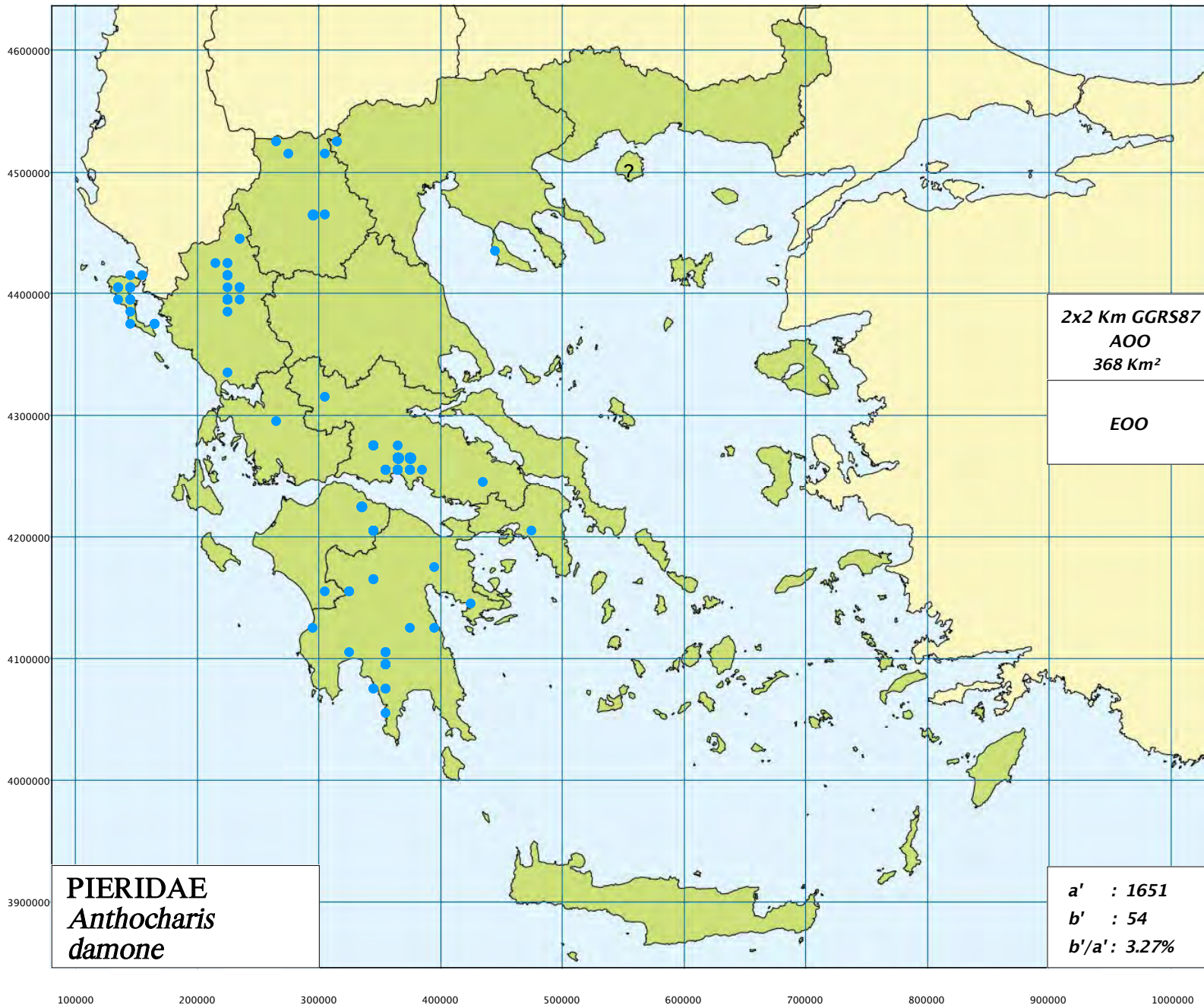


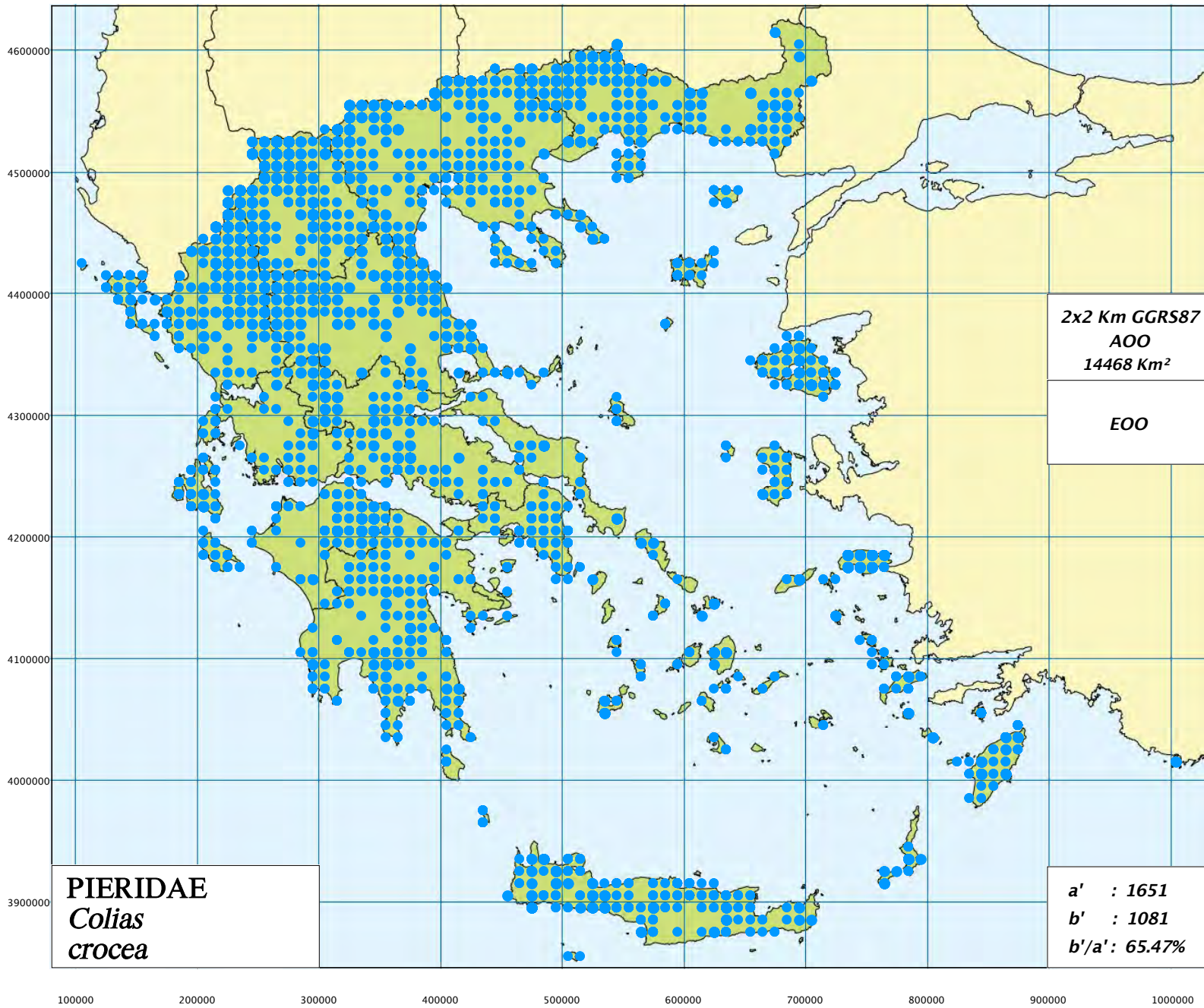


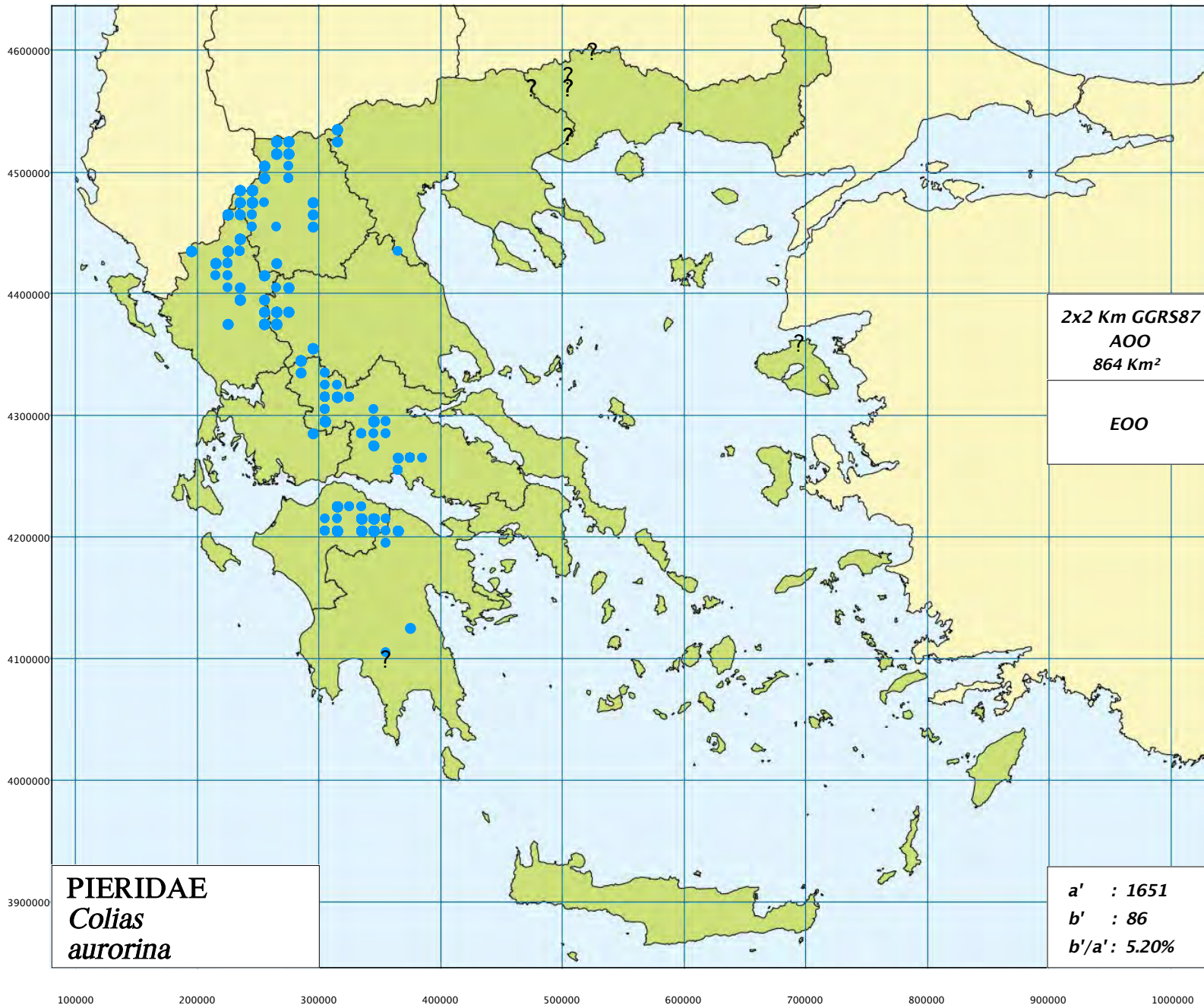


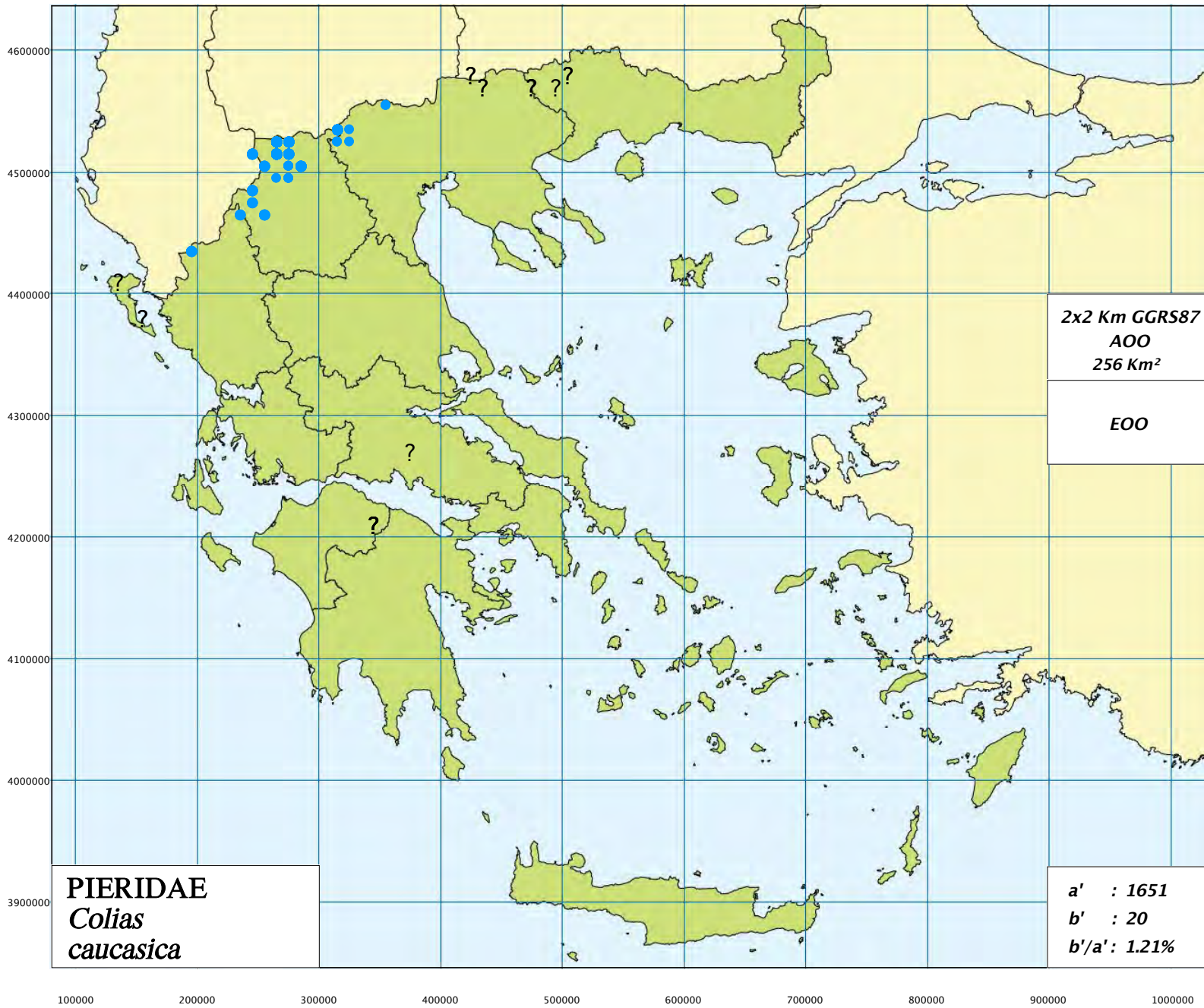


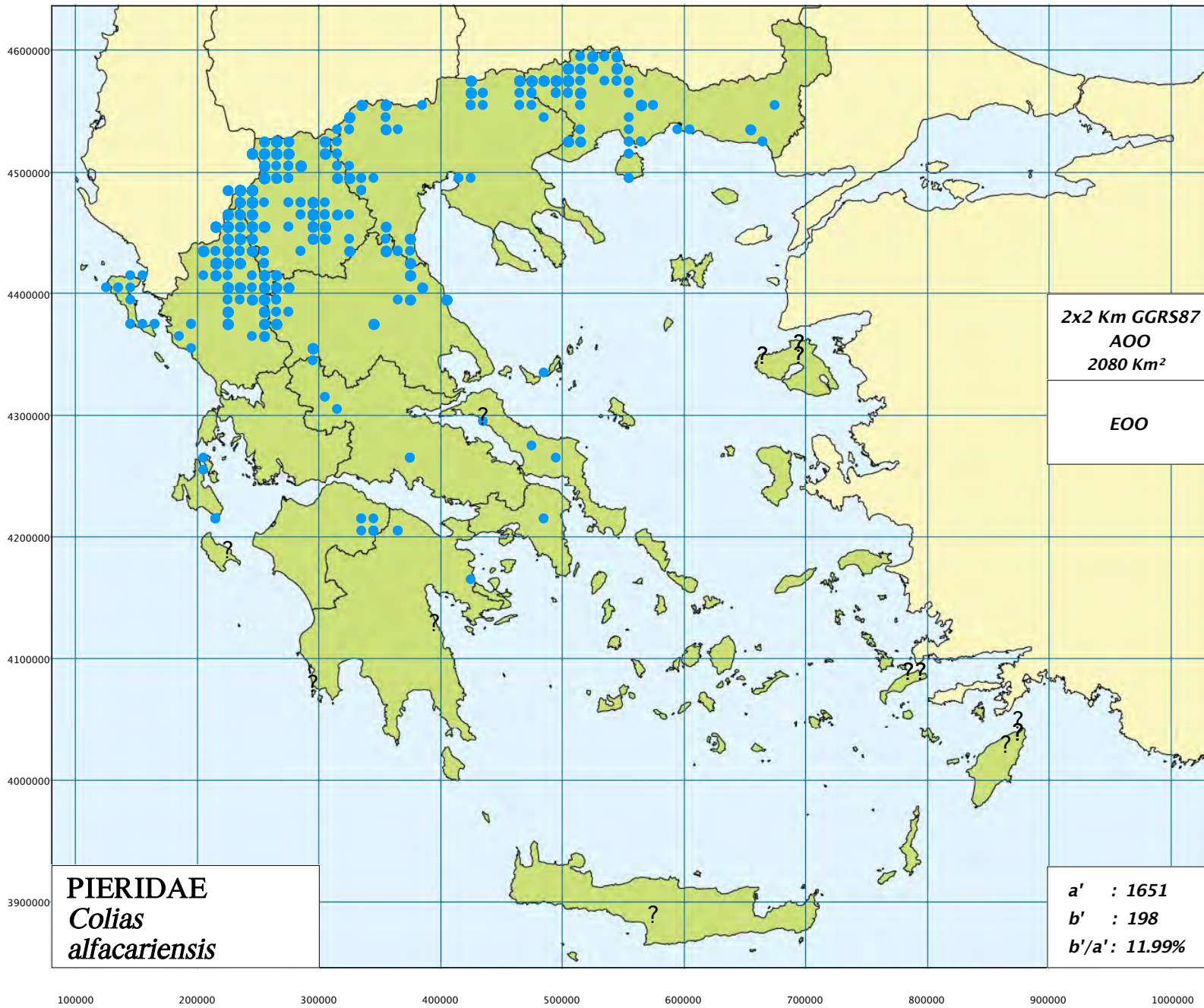




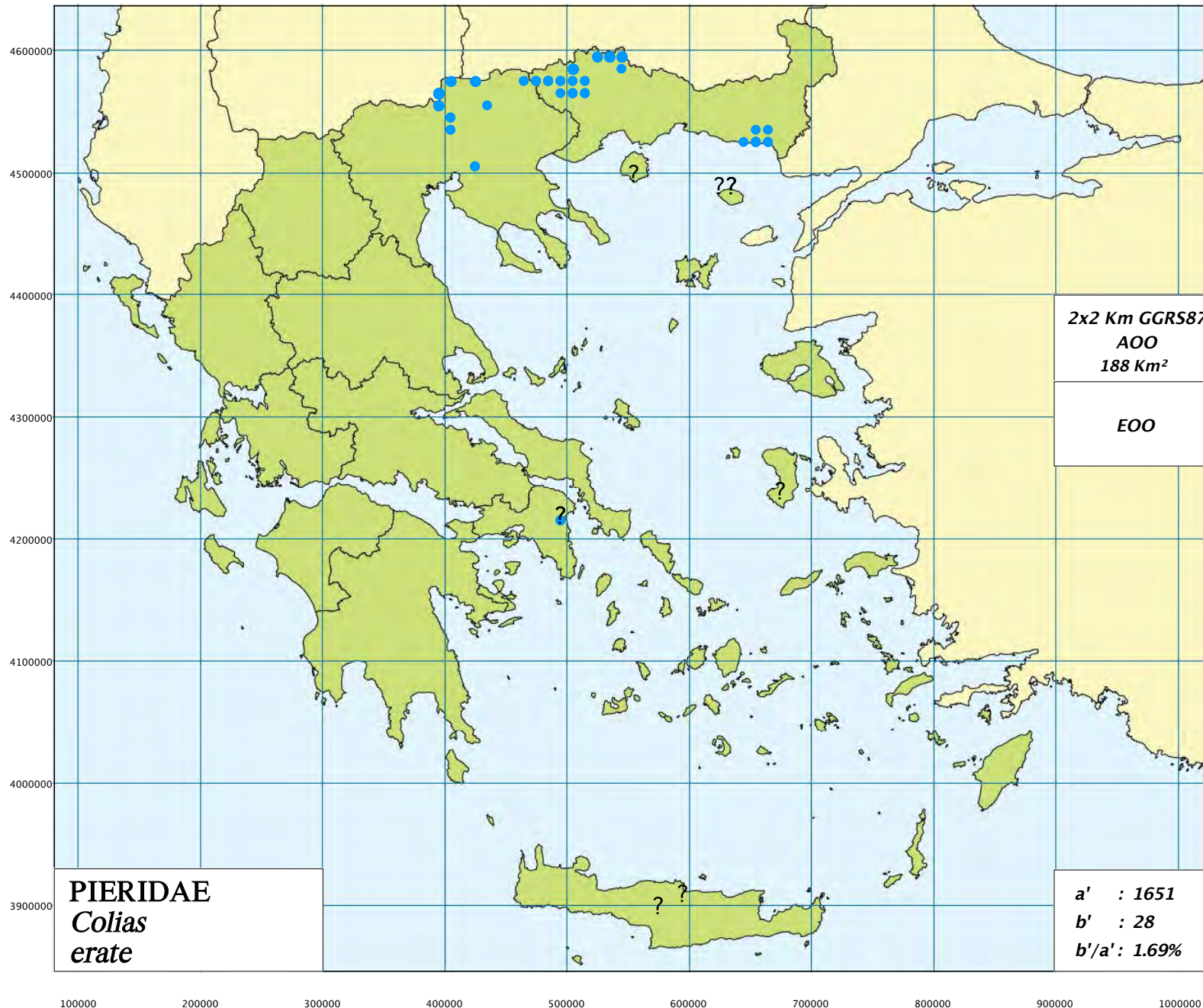




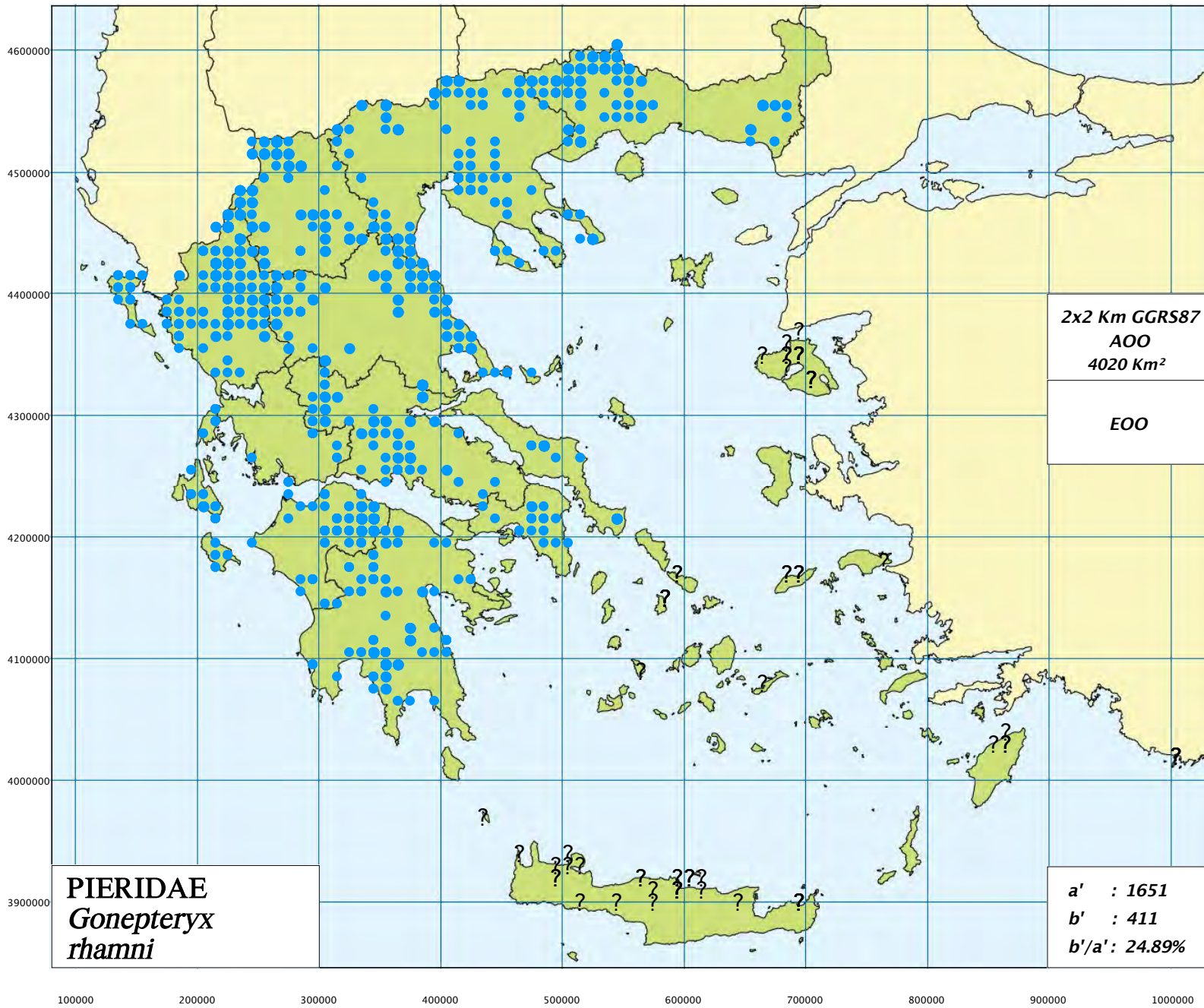




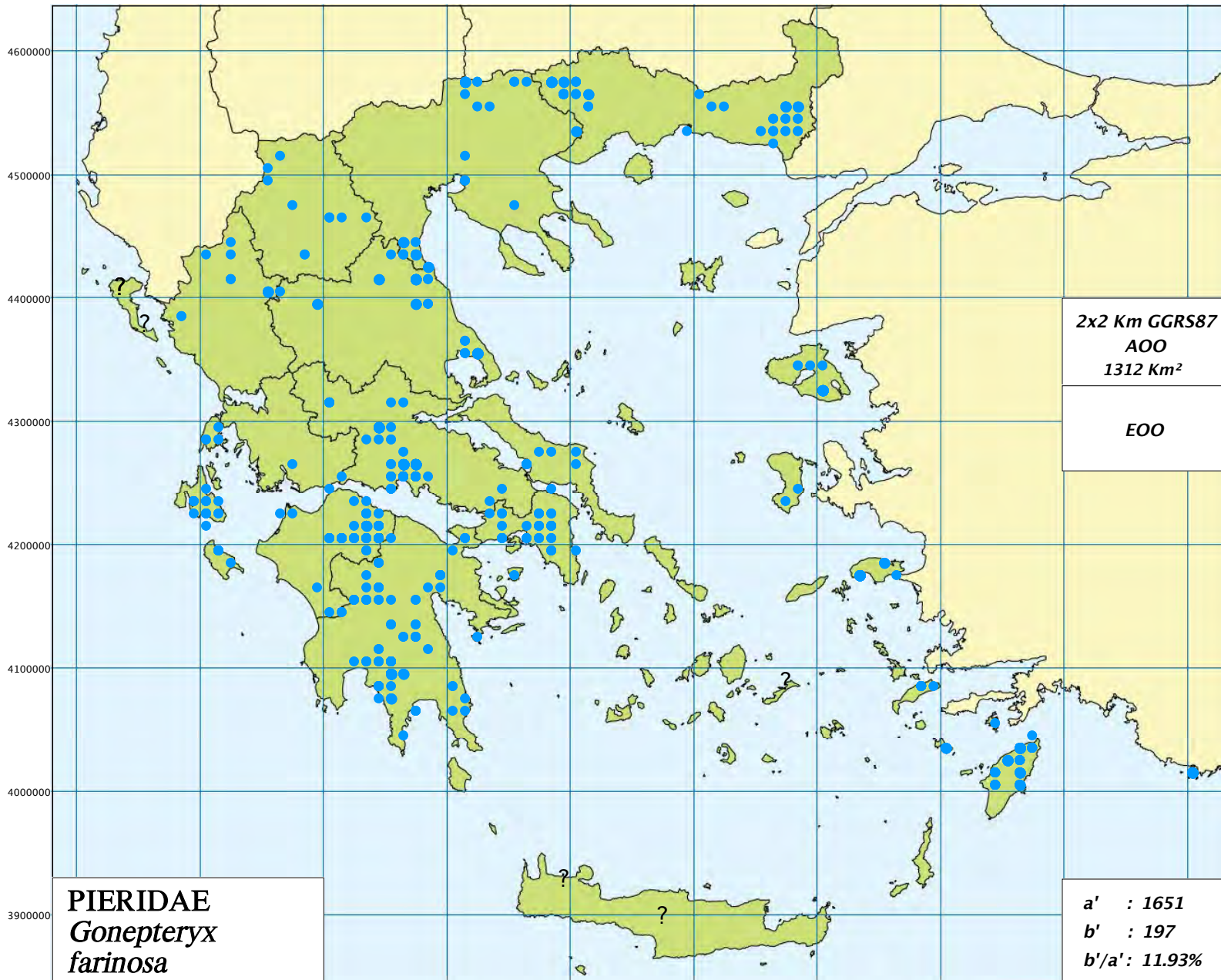
Αμφίβολη αναγνώριση /
Identification Uncertain



https://www.pamperis.gr/PHOTOGRAPHS/Colias_crocea_erate_complex.html

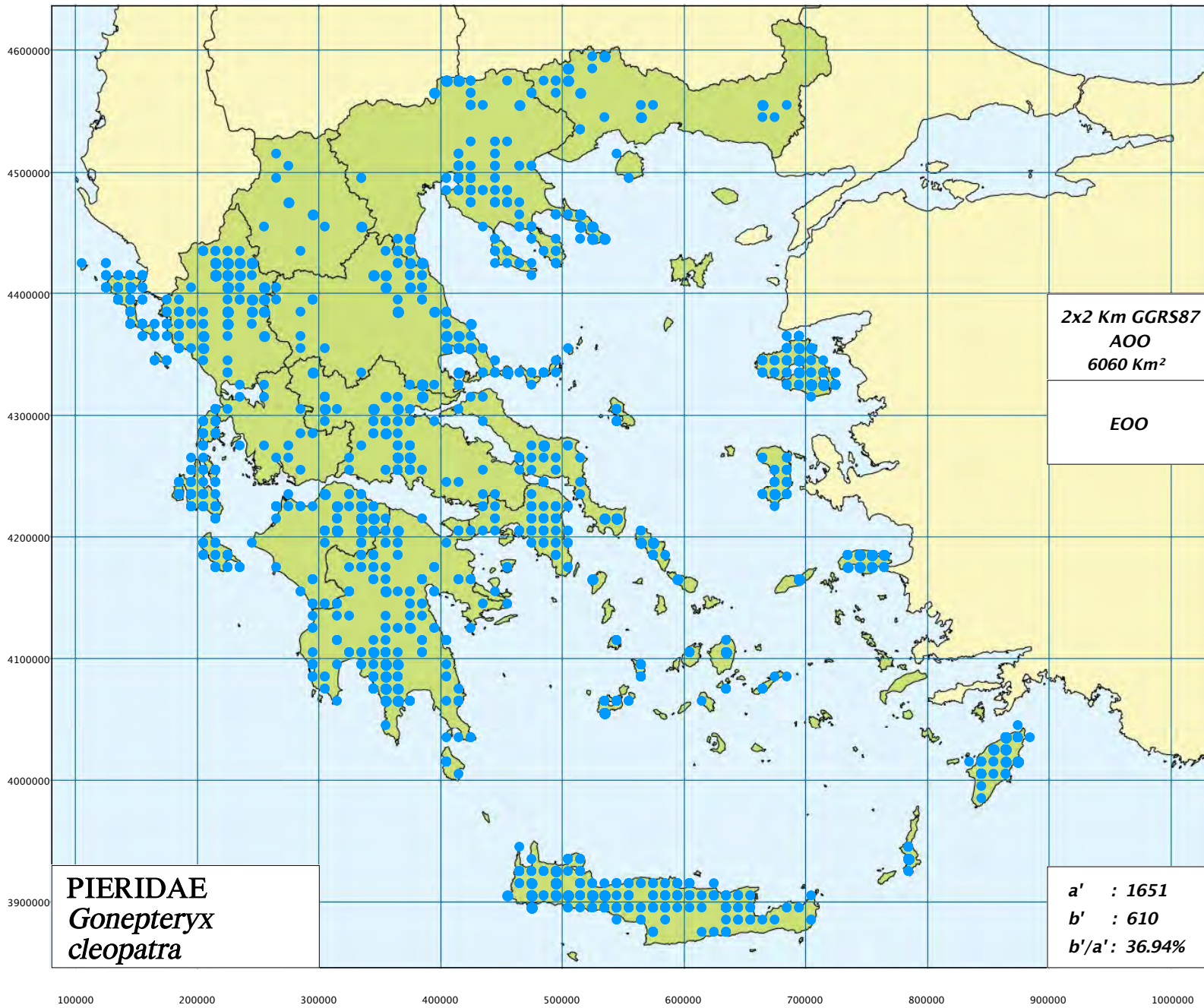


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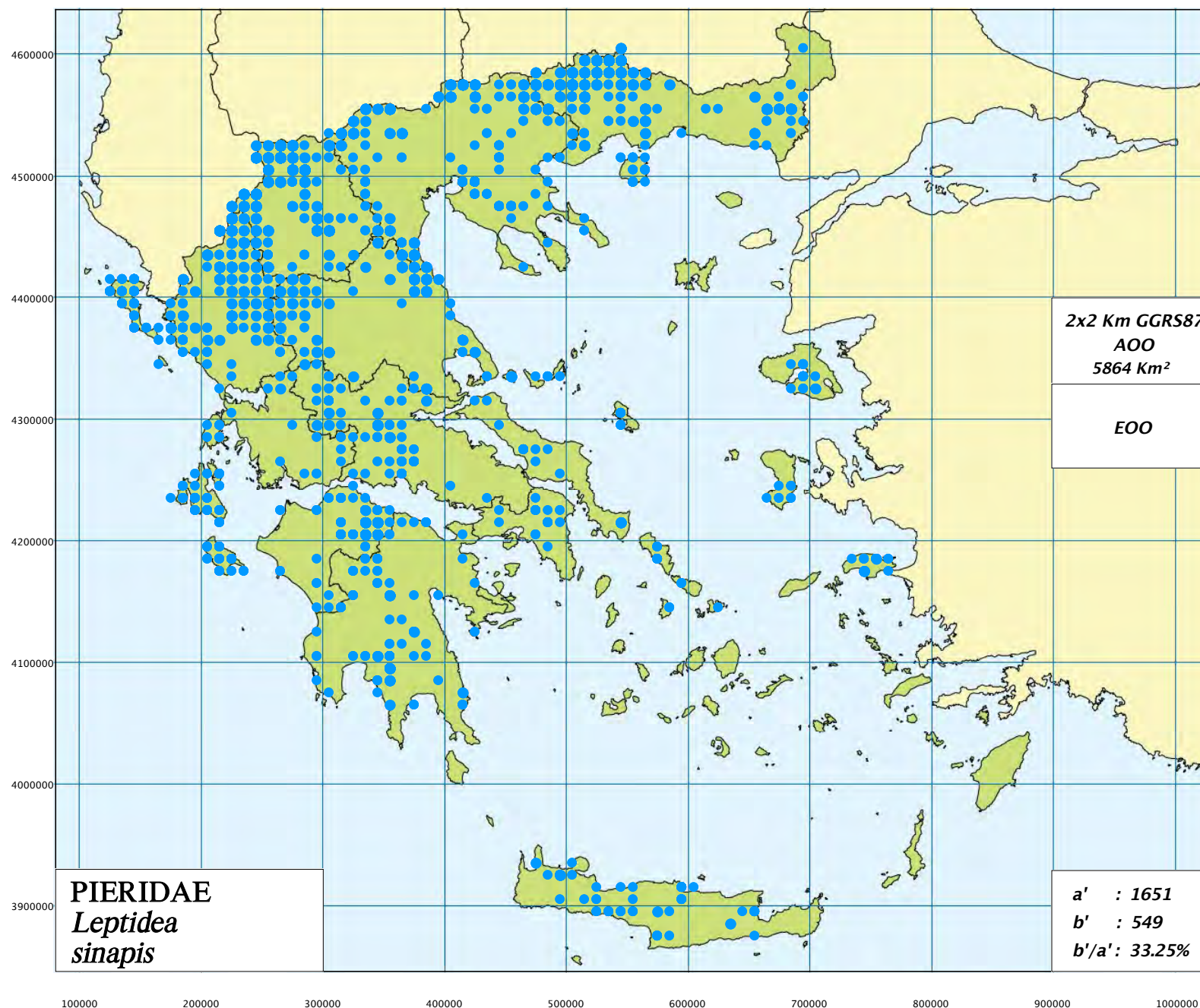
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<https://www.pamperis.gr/PHOTOGRAPHS/Gonepteryx.html>



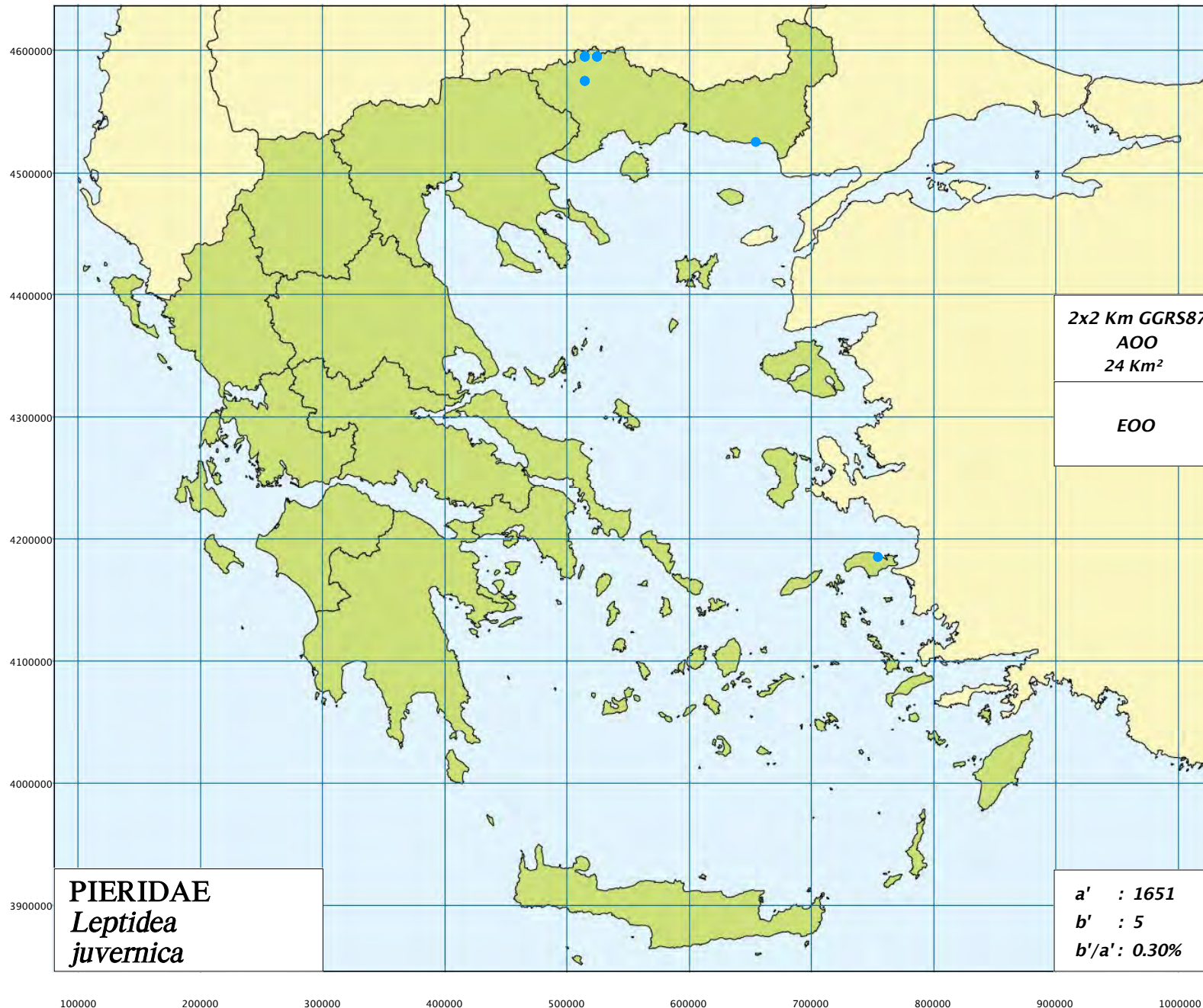
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Αμφίβολη αναγνώριση /
Identification Uncertain

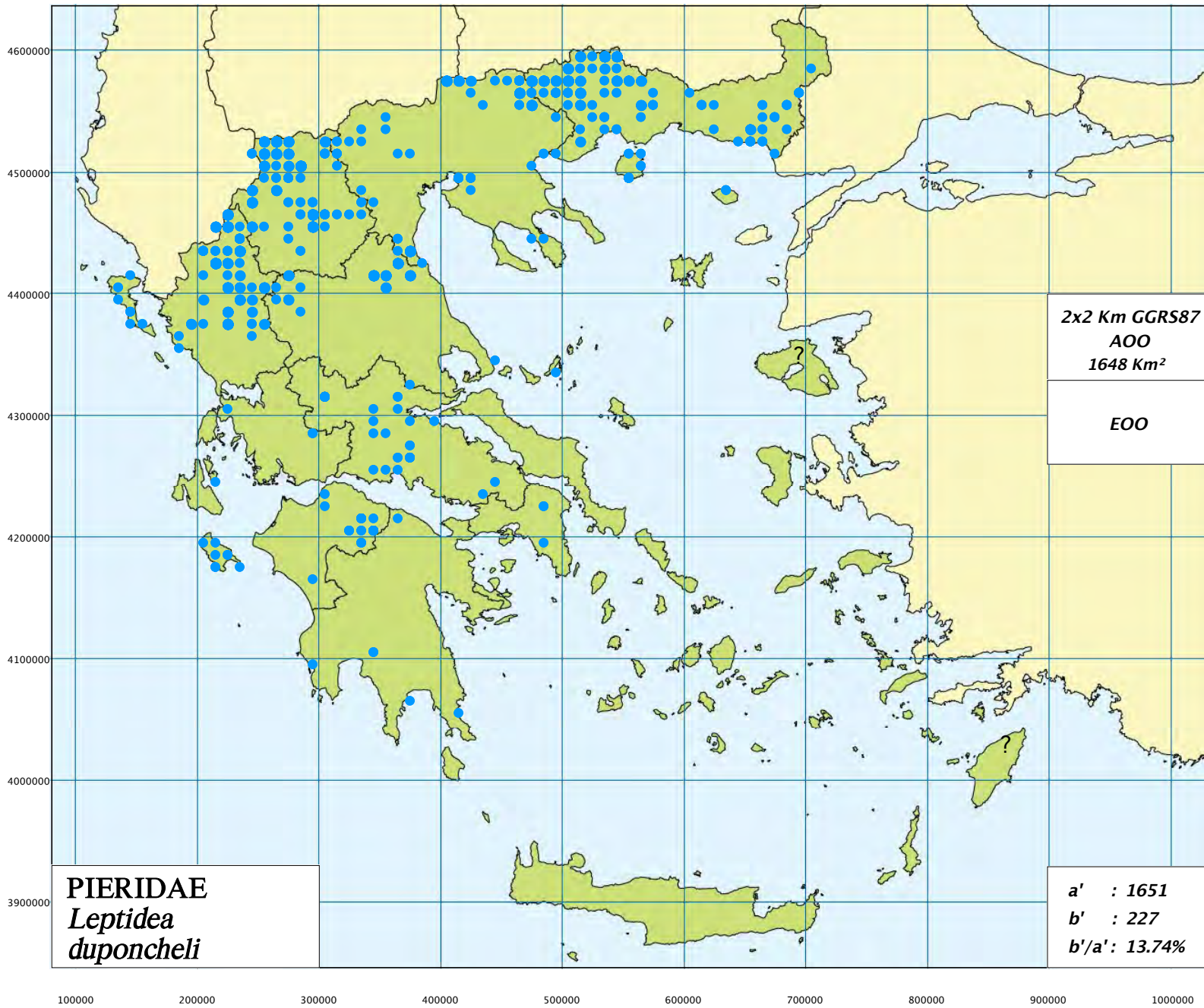


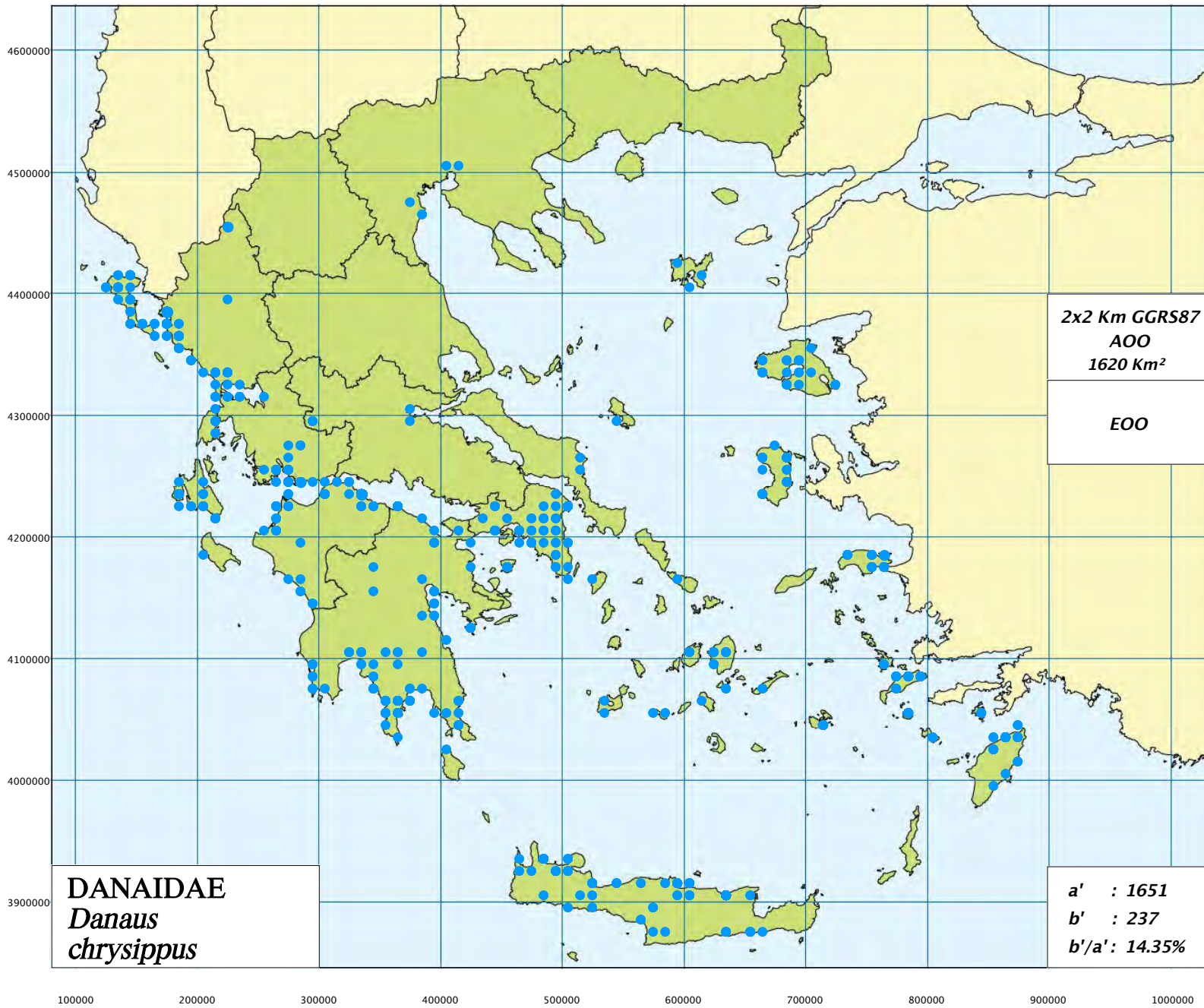
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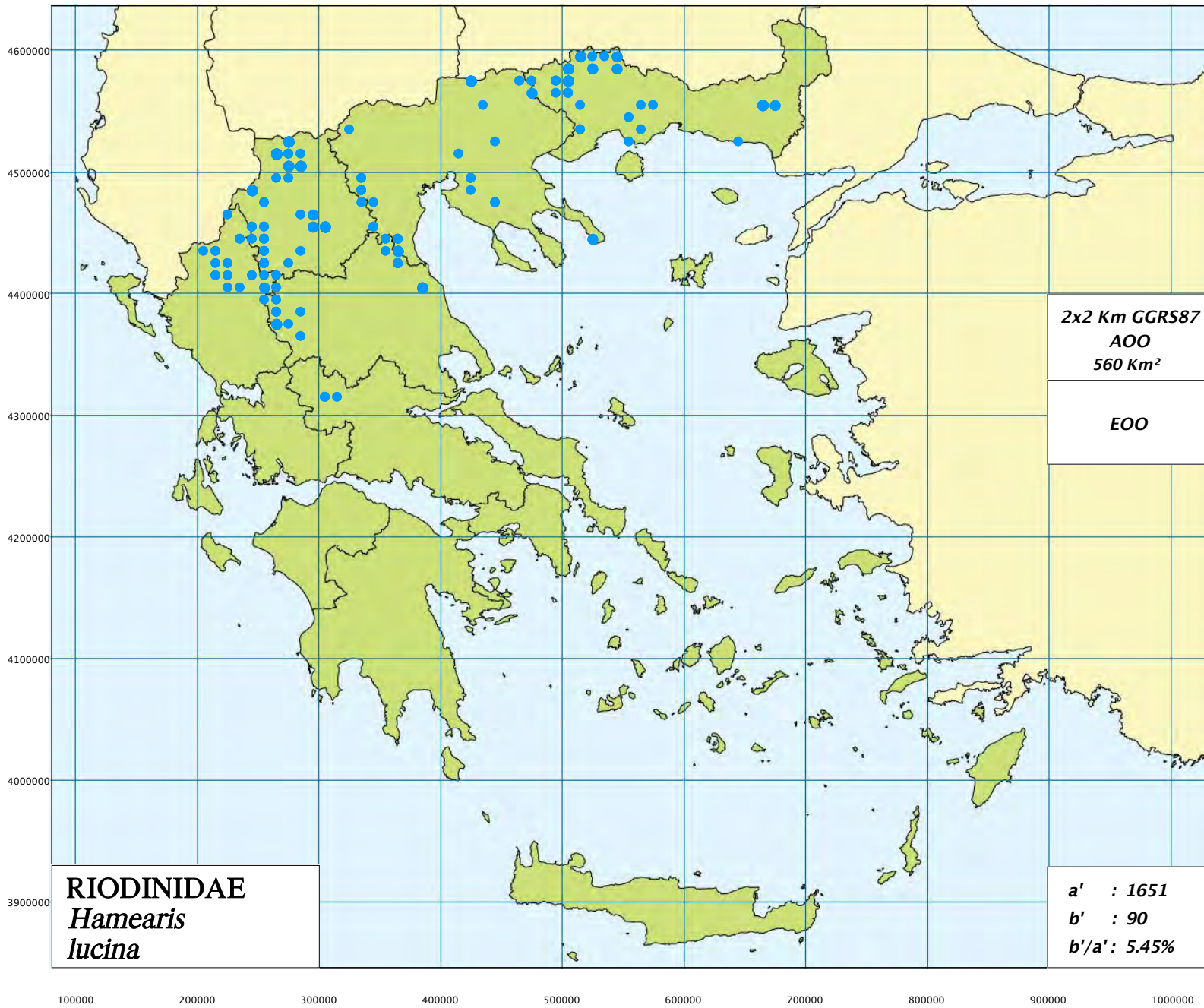
Αμφίβολη αναγνώριση /
Identification Uncertain



https://www.pamperis.gr/PHOTOGRAPHS/Leptidea_sinapis_juvernica_complex.html





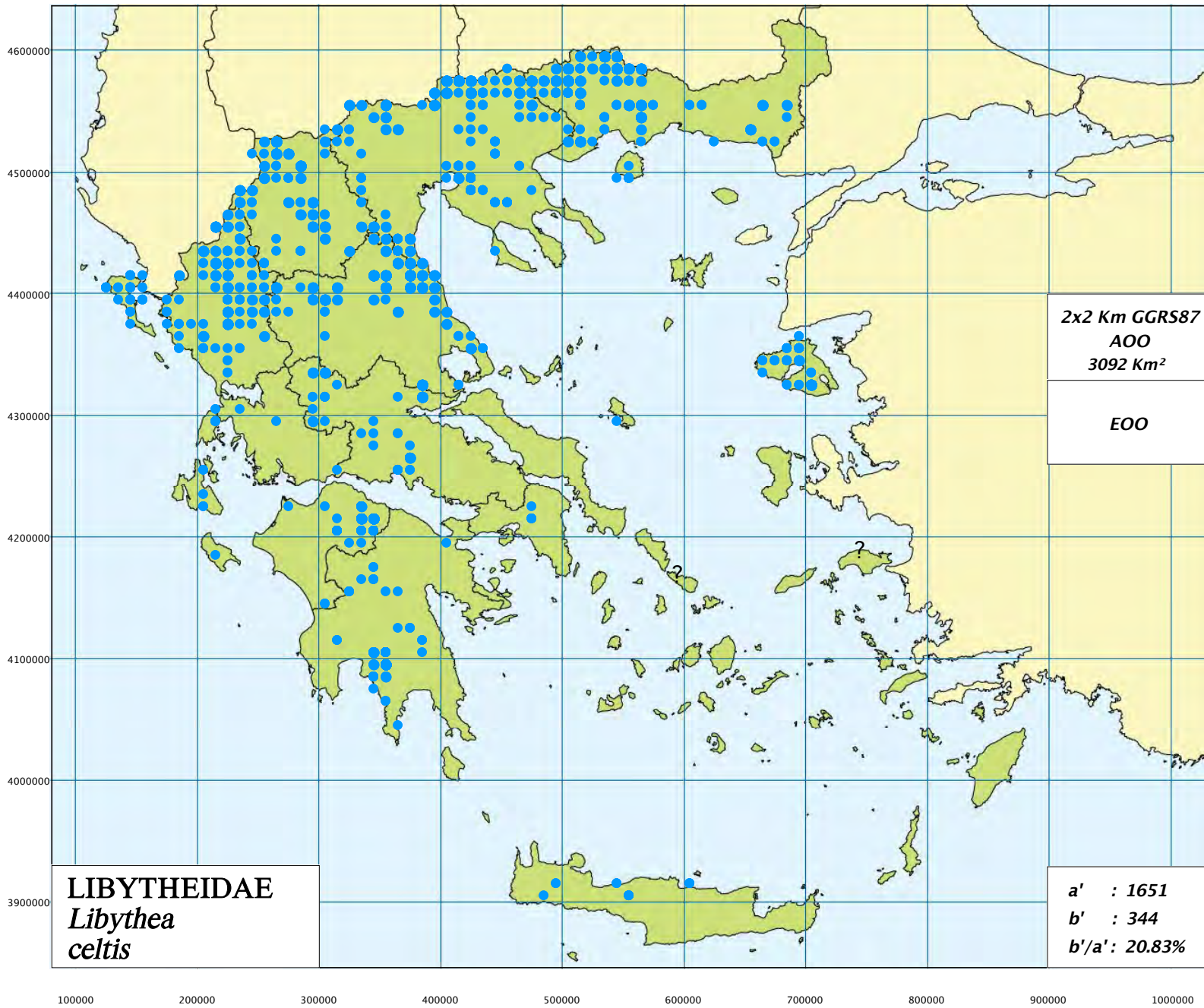


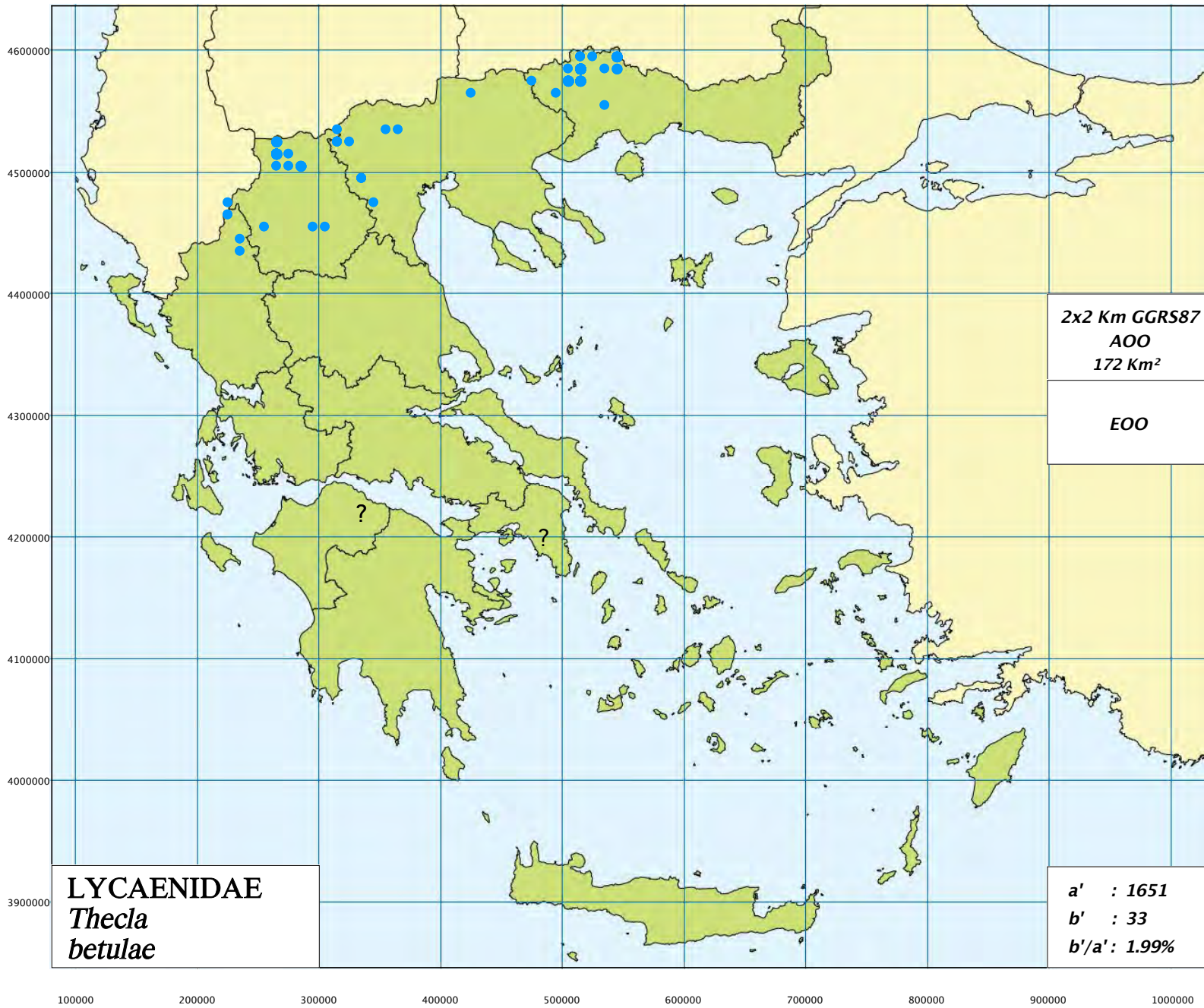
RIODINIDAE
Hamearis
lucina

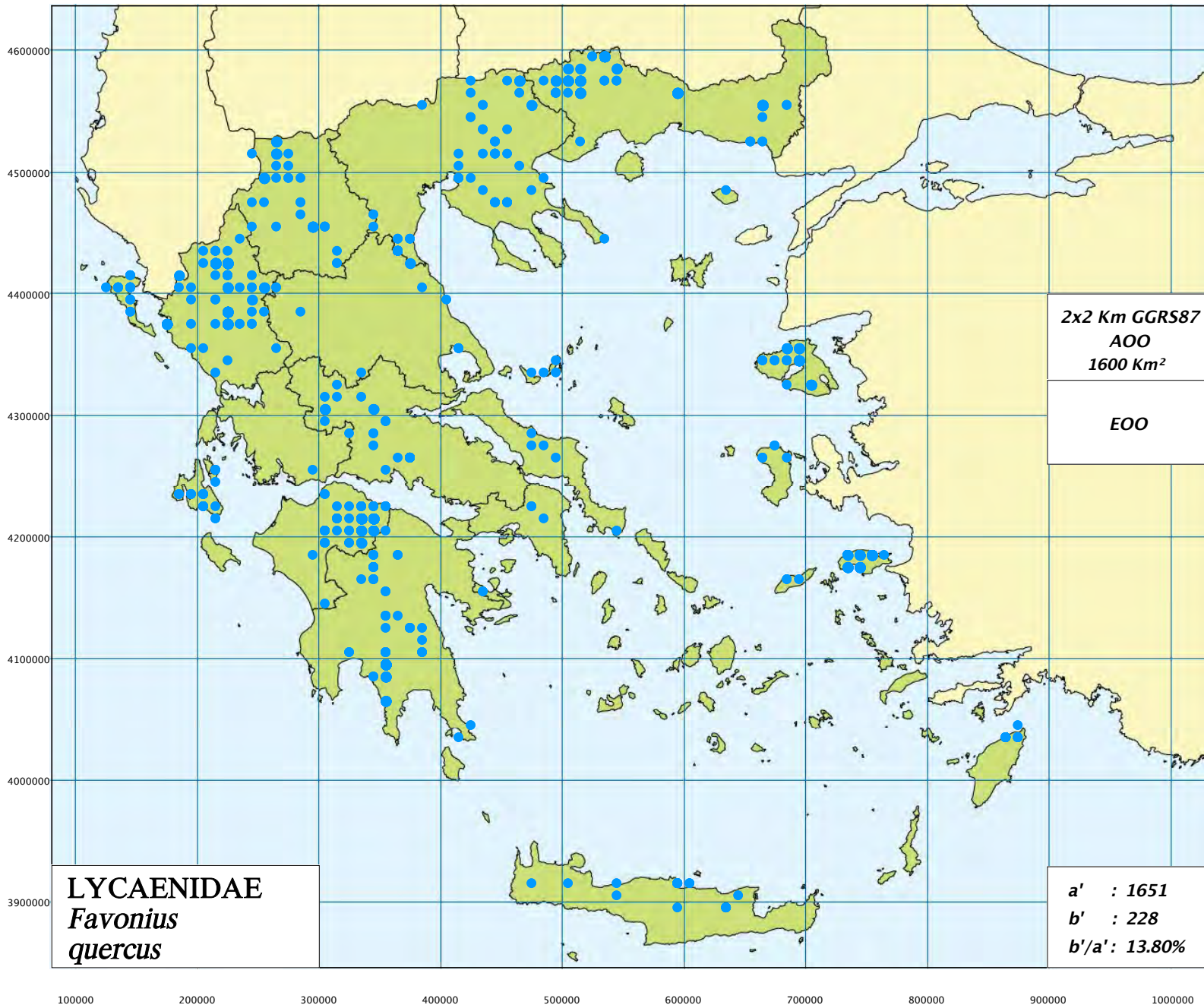
a' : 1651
b' : 90
b'/a' : 5.45%

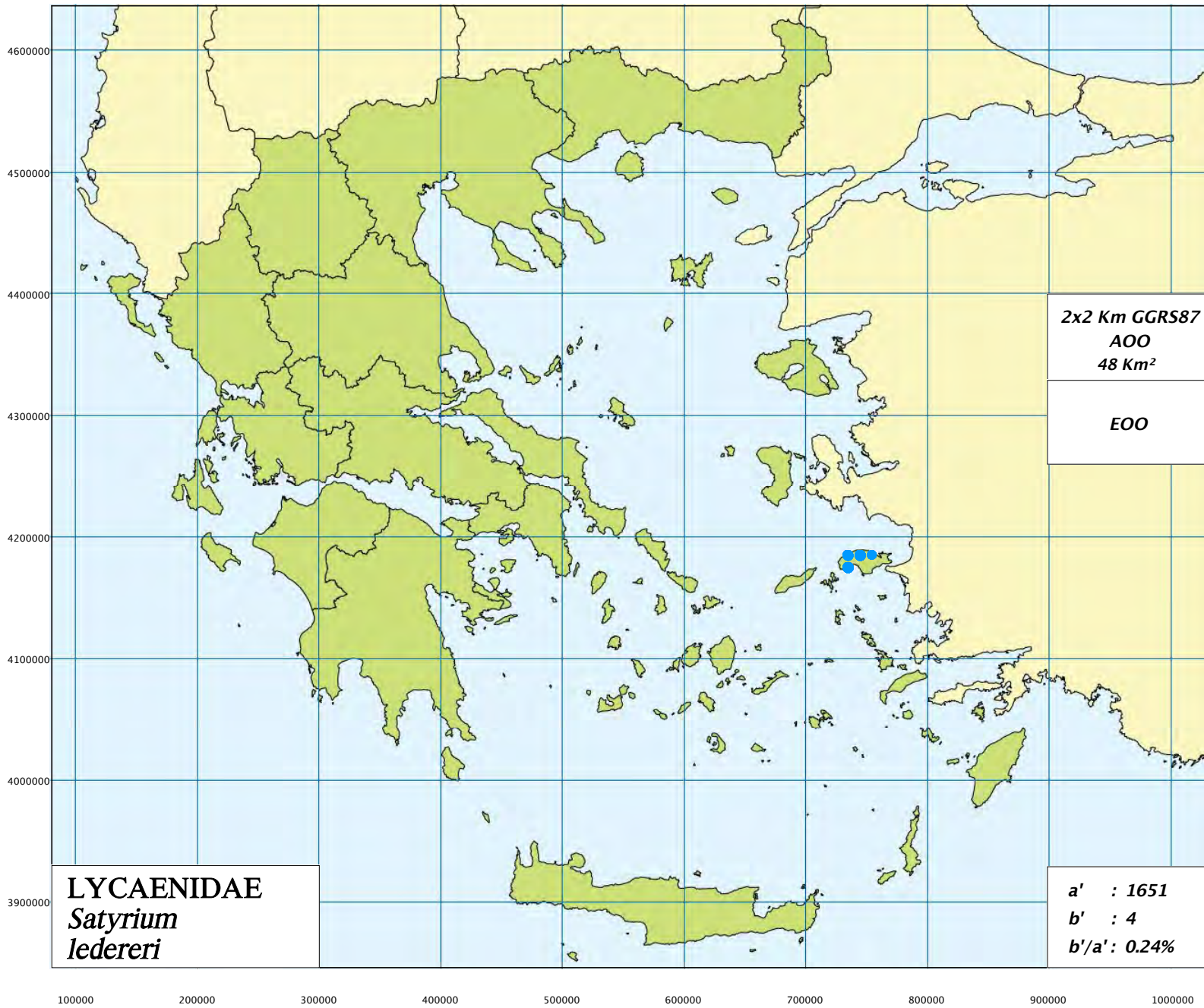
2x2 Km GGRS87
 AOO
 560 Km²
 EOO

100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000







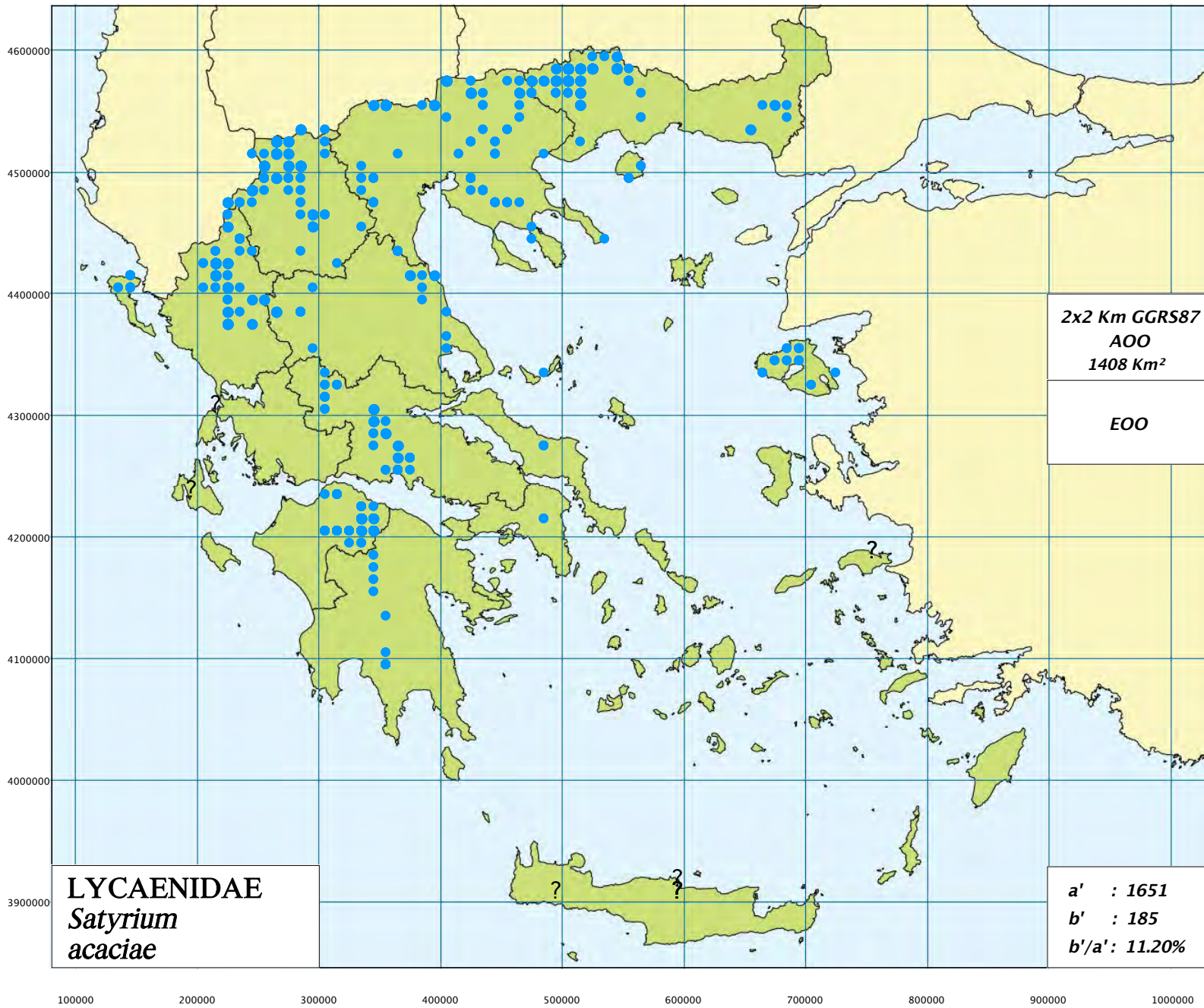


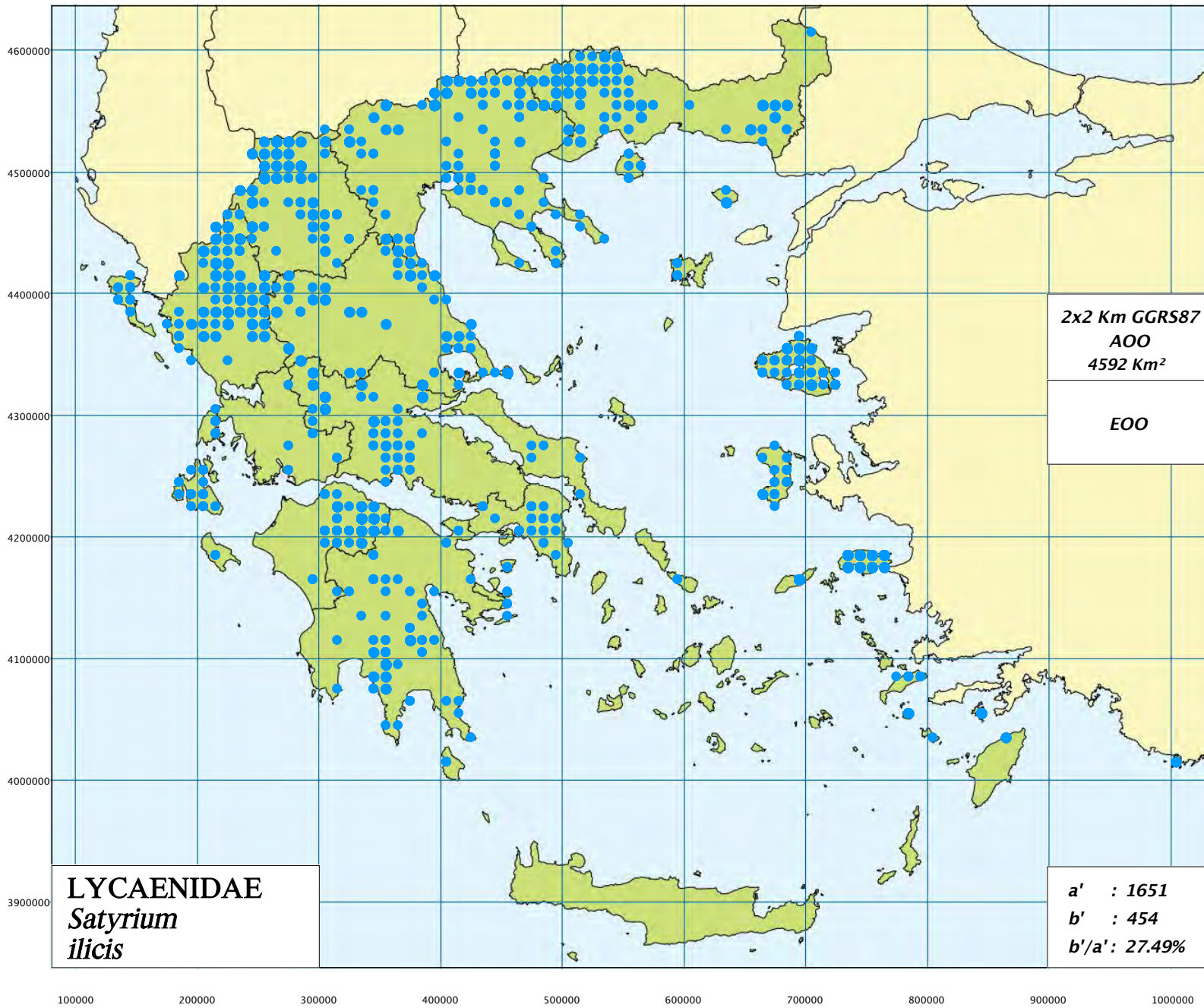
LYCAENIDAE
Satyrium
ledereri

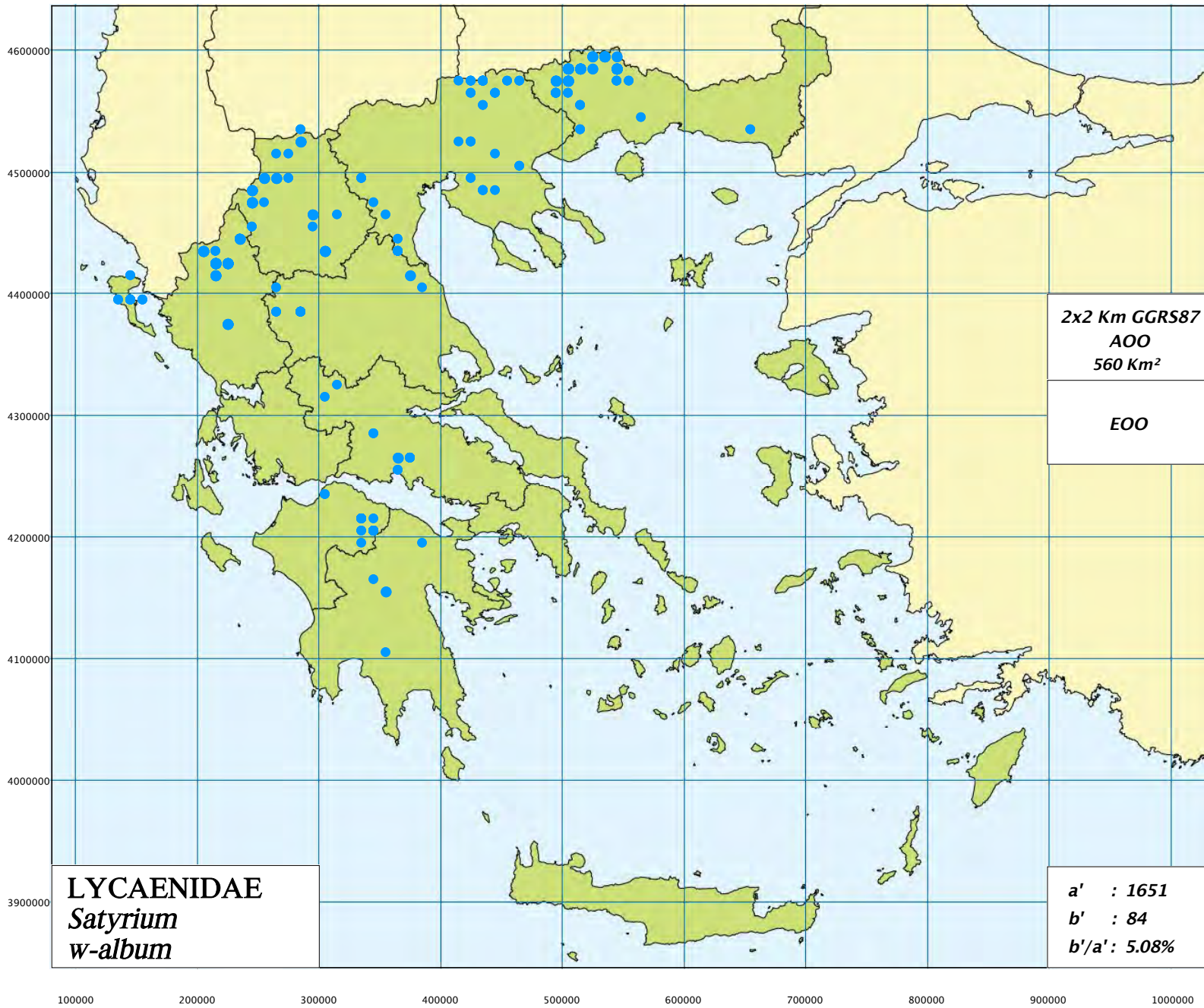
2x2 Km GGRS87
AOO
48 Km²
EOO

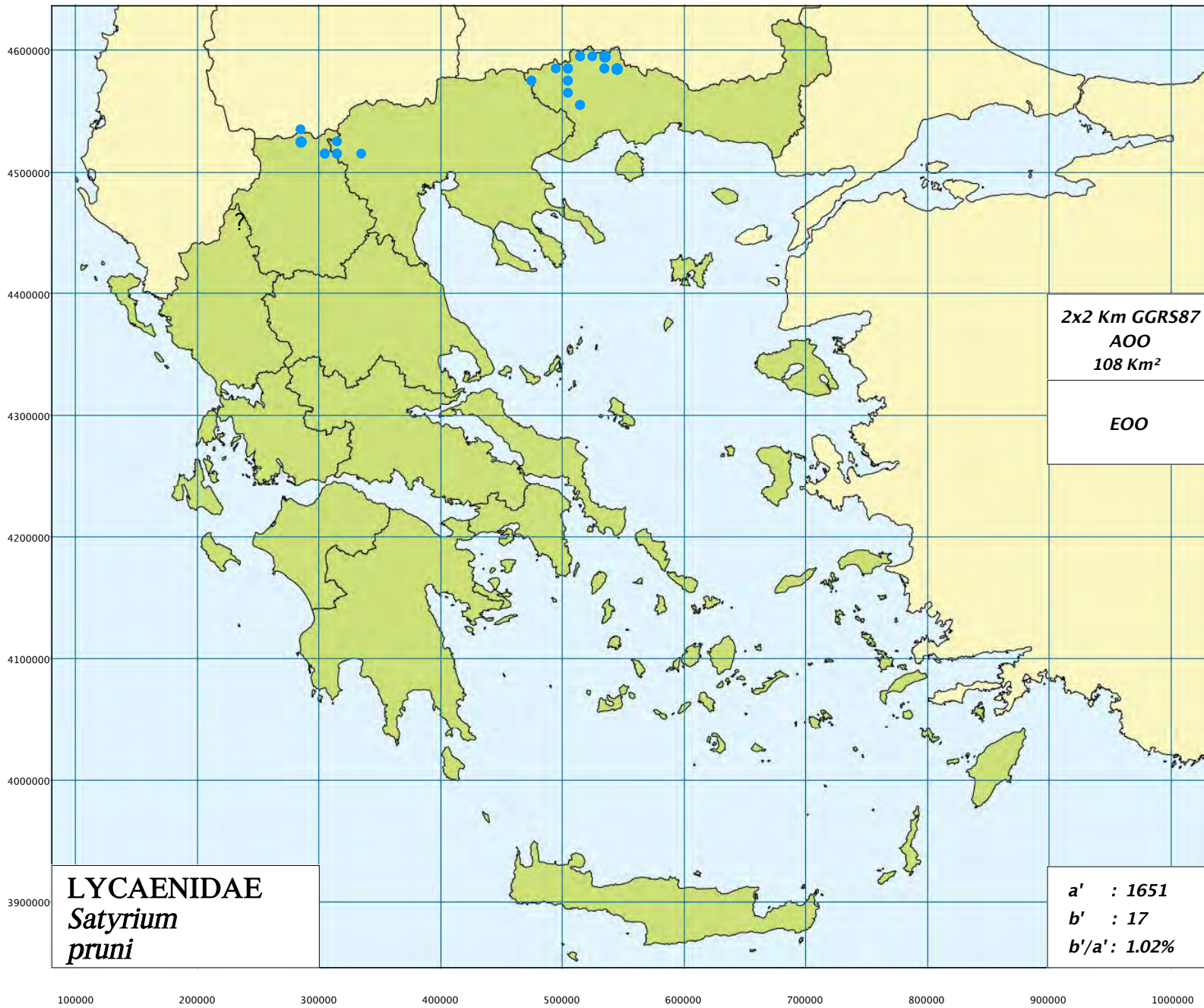
a' : 1651
b' : 4
b'/a' : 0.24%

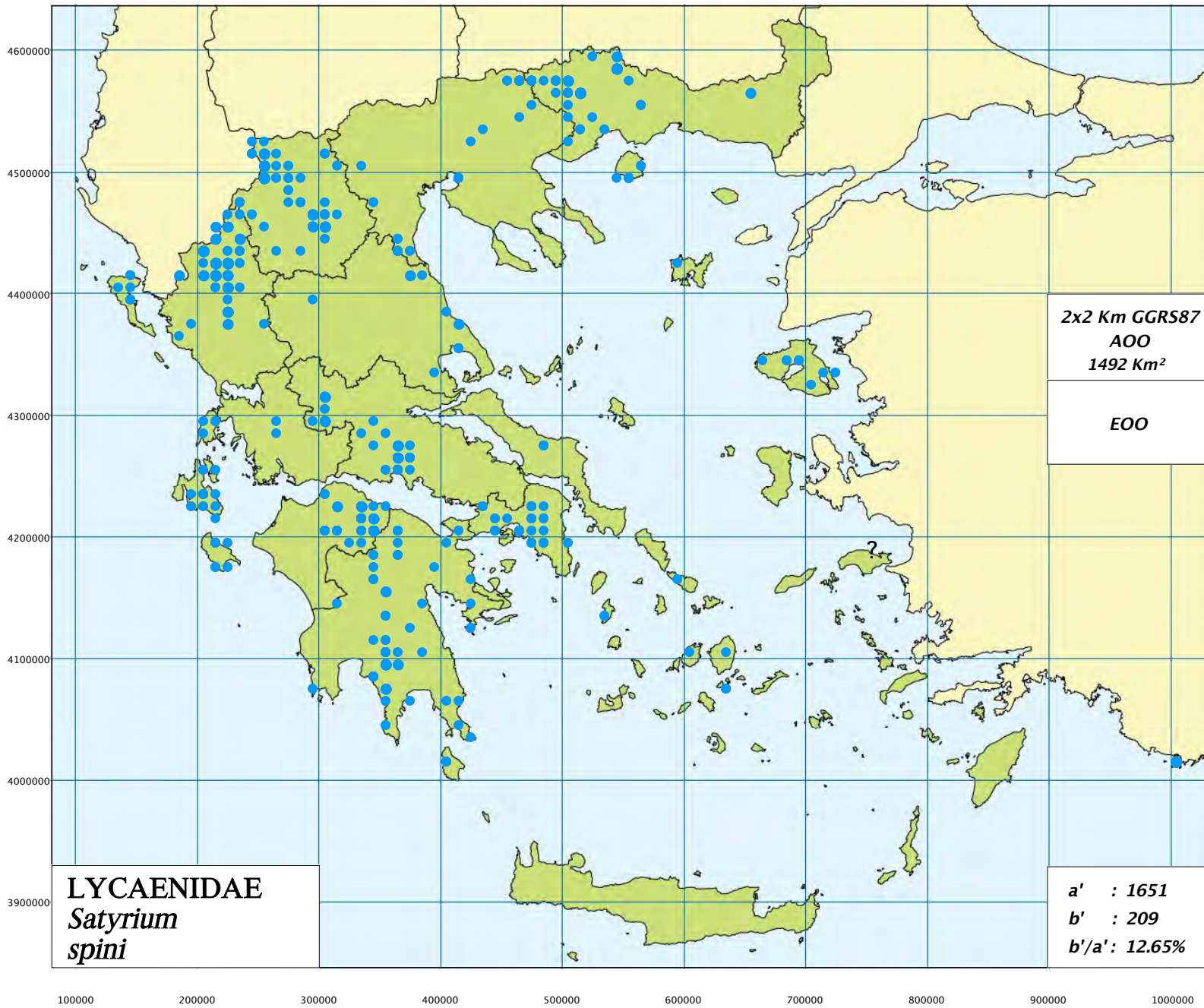
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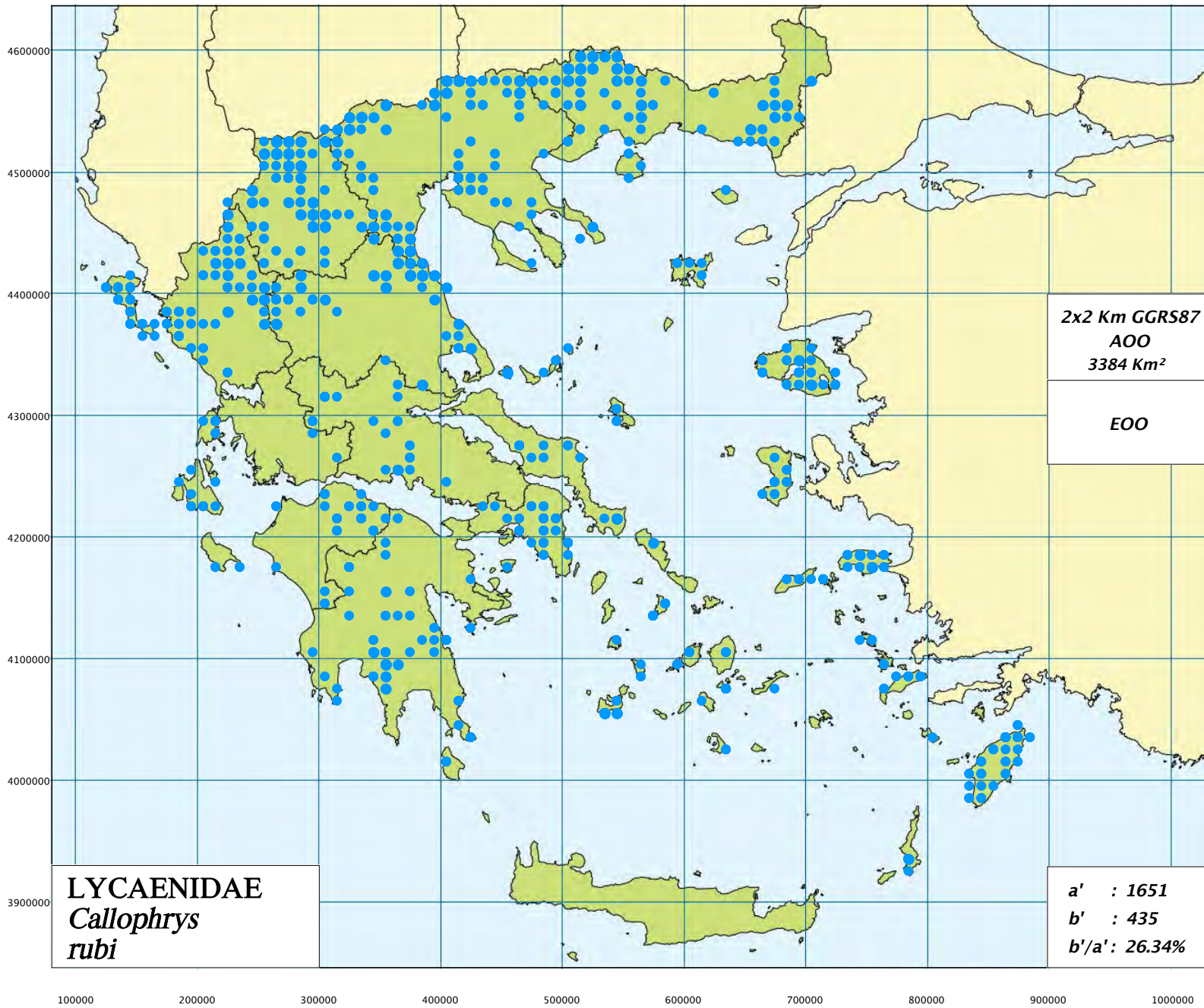


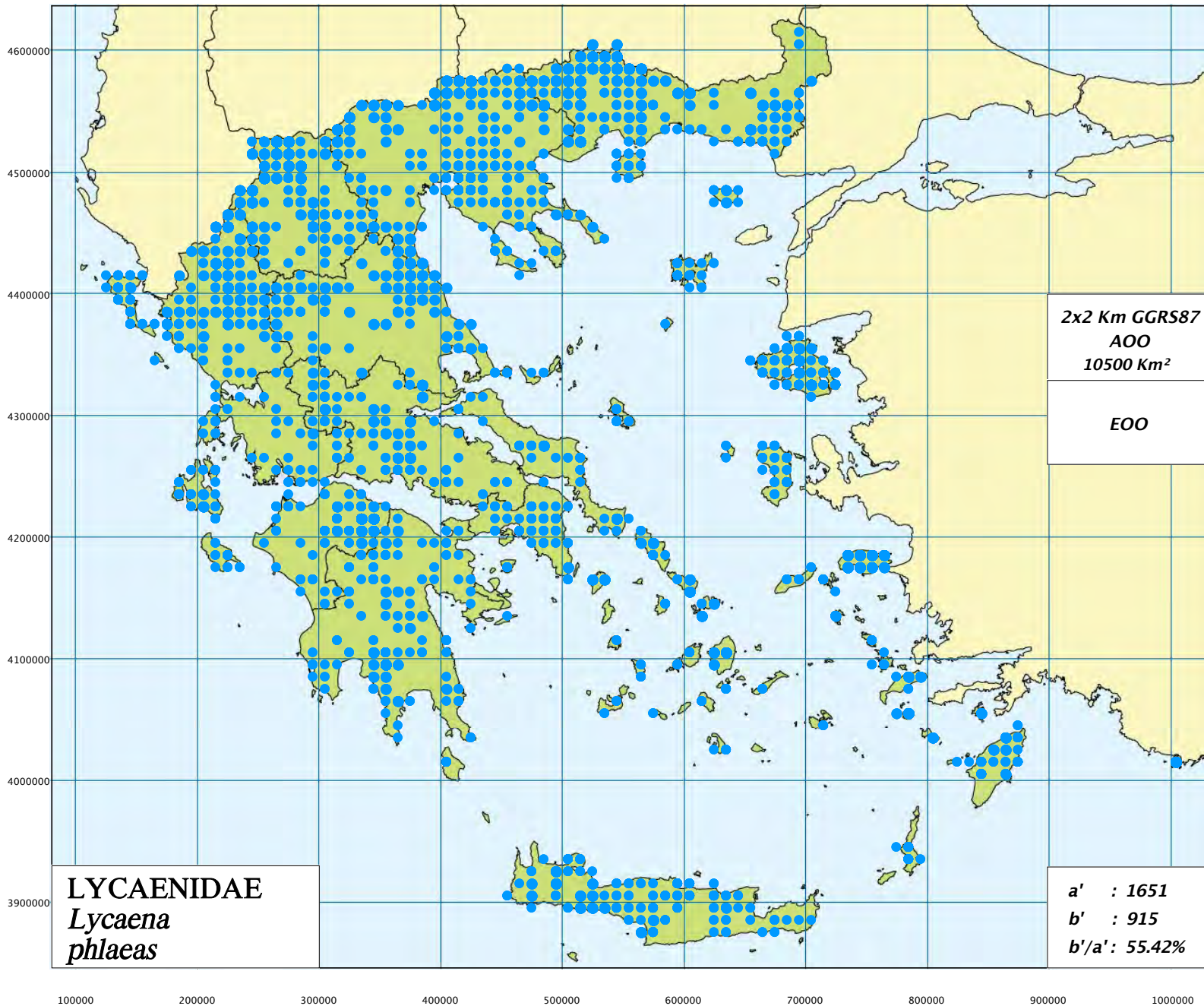










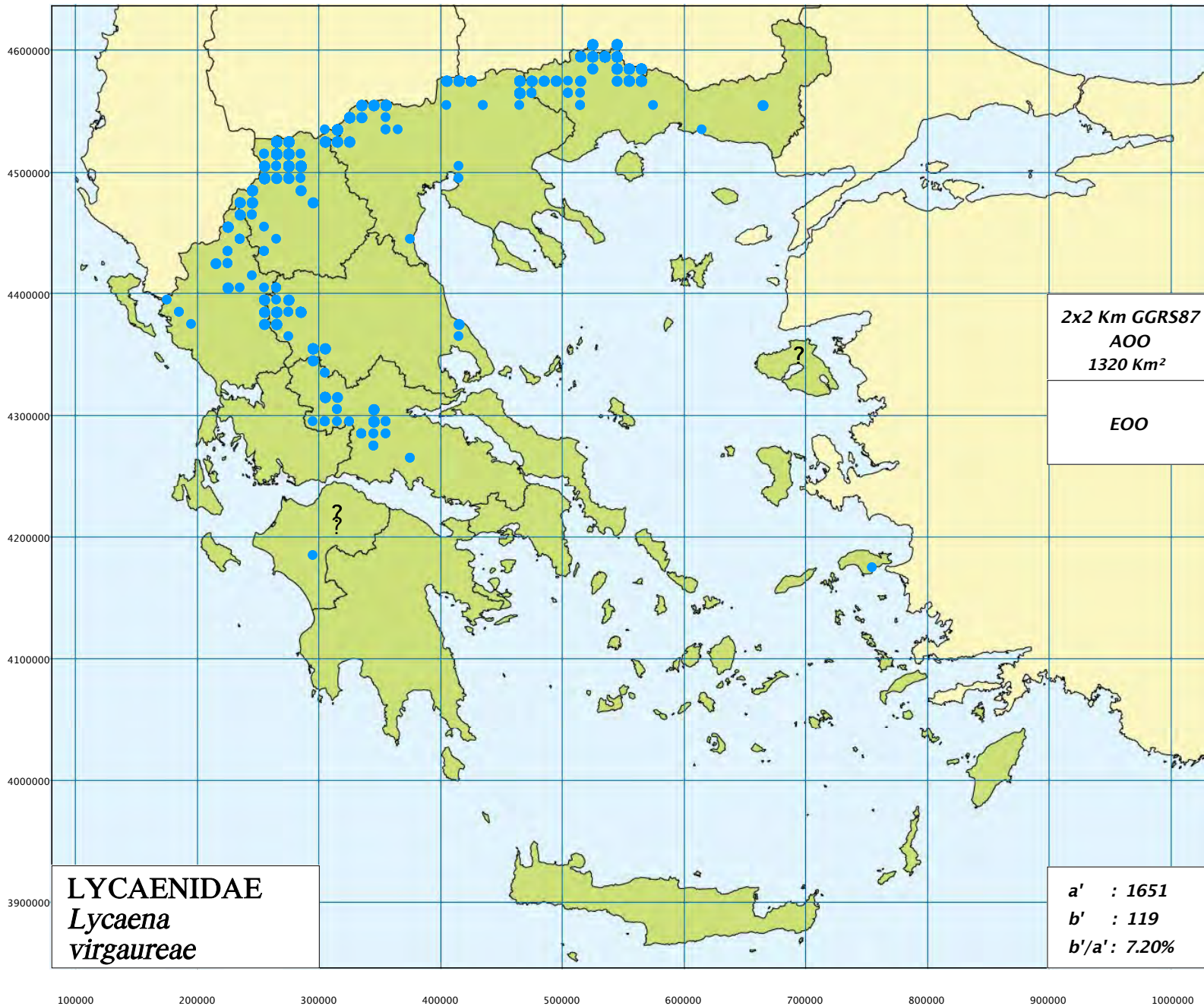


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<https://www.pamperis.gr/PHOTOGRAPHS/Lycaena.html>



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<https://www.pamperis.gr/PHOTOGRAPHS/Lycaena.html>

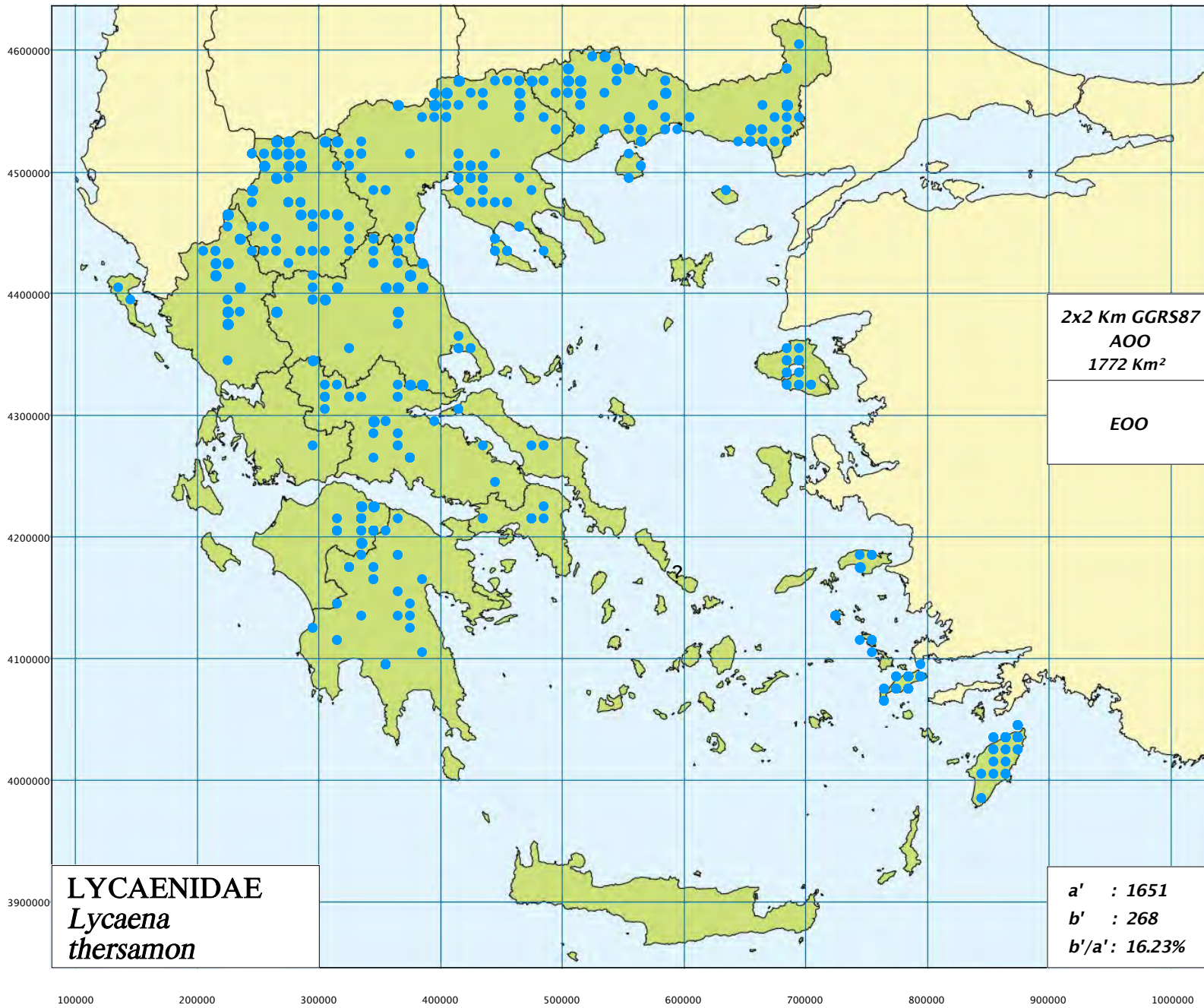


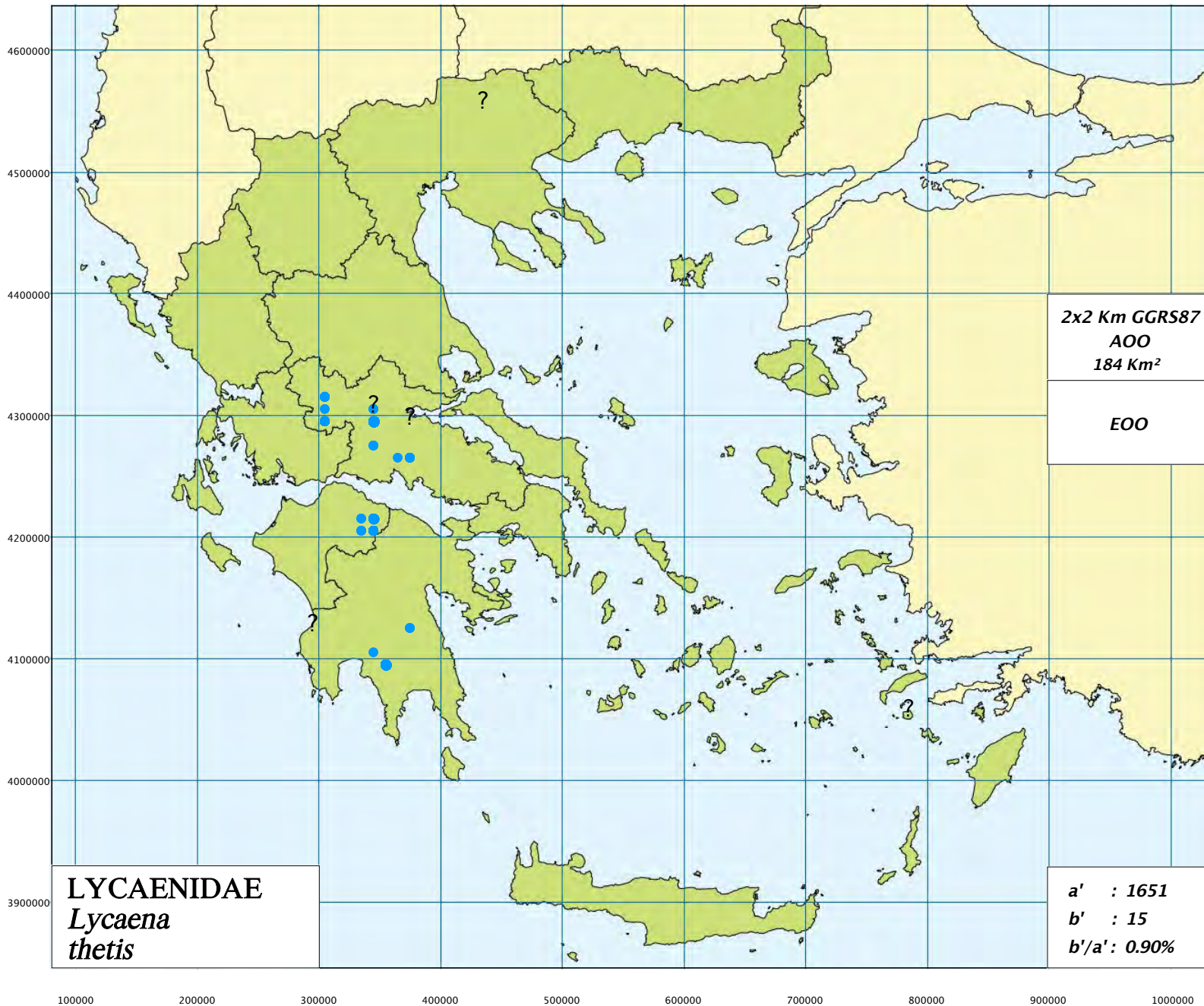
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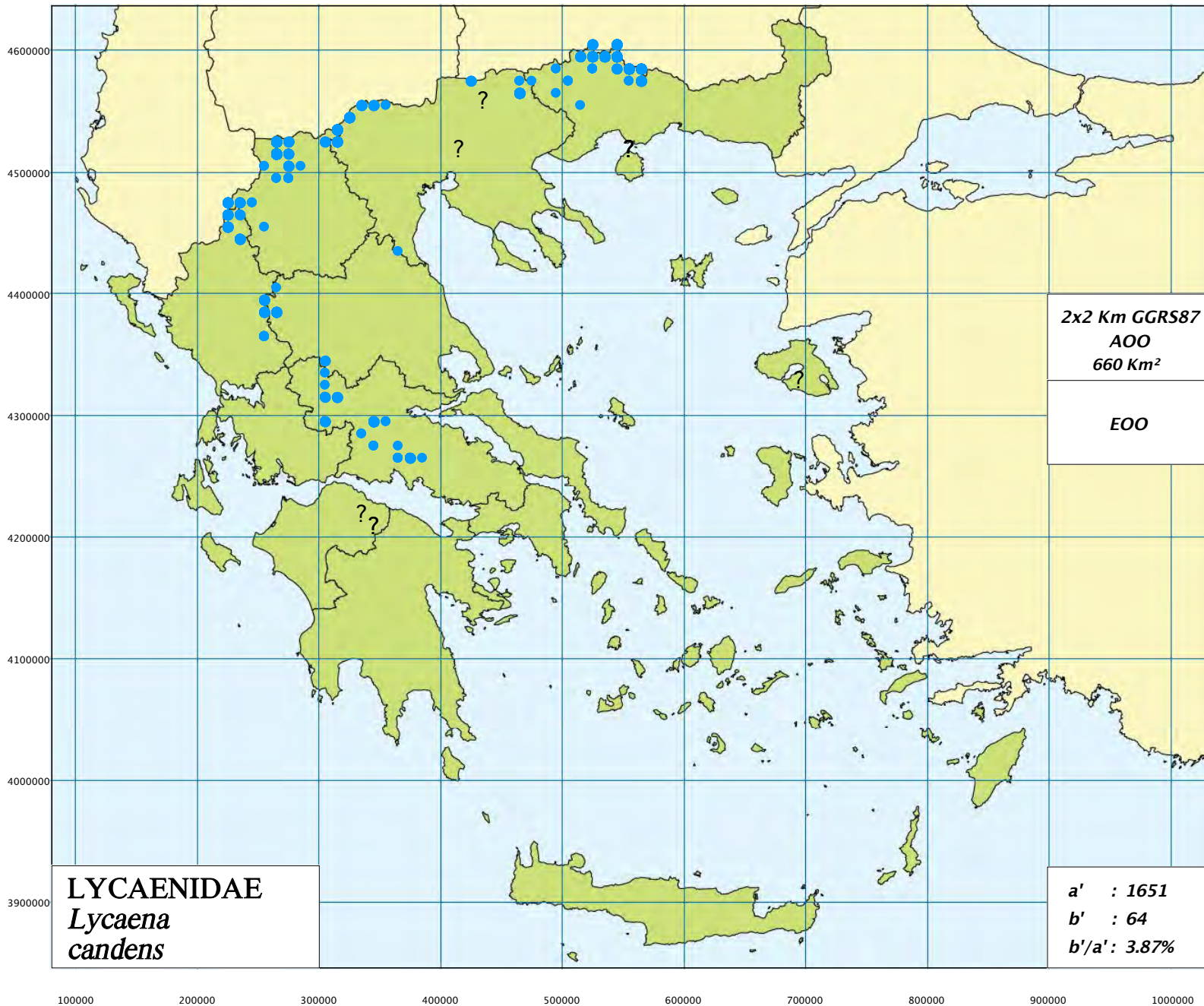


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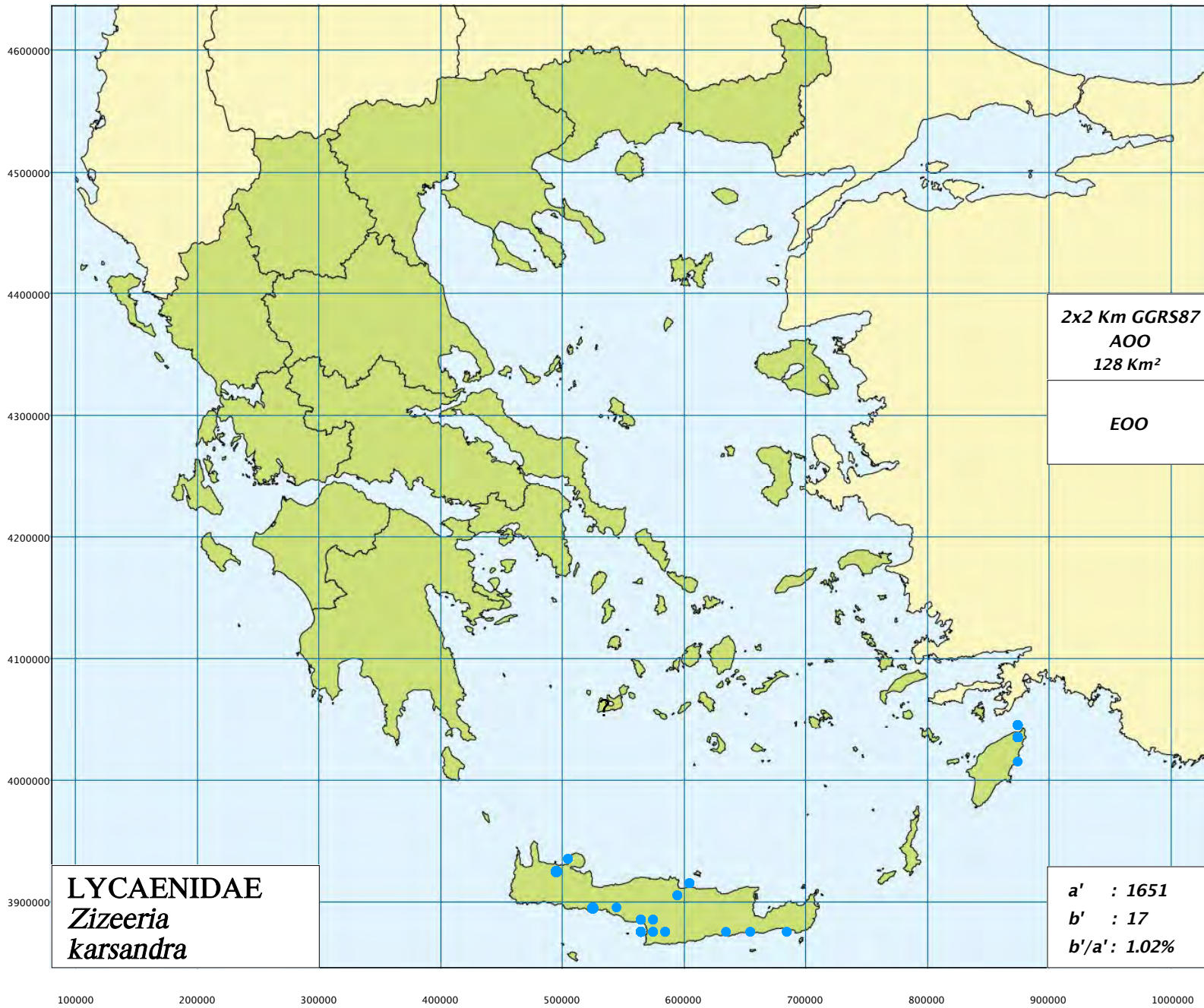


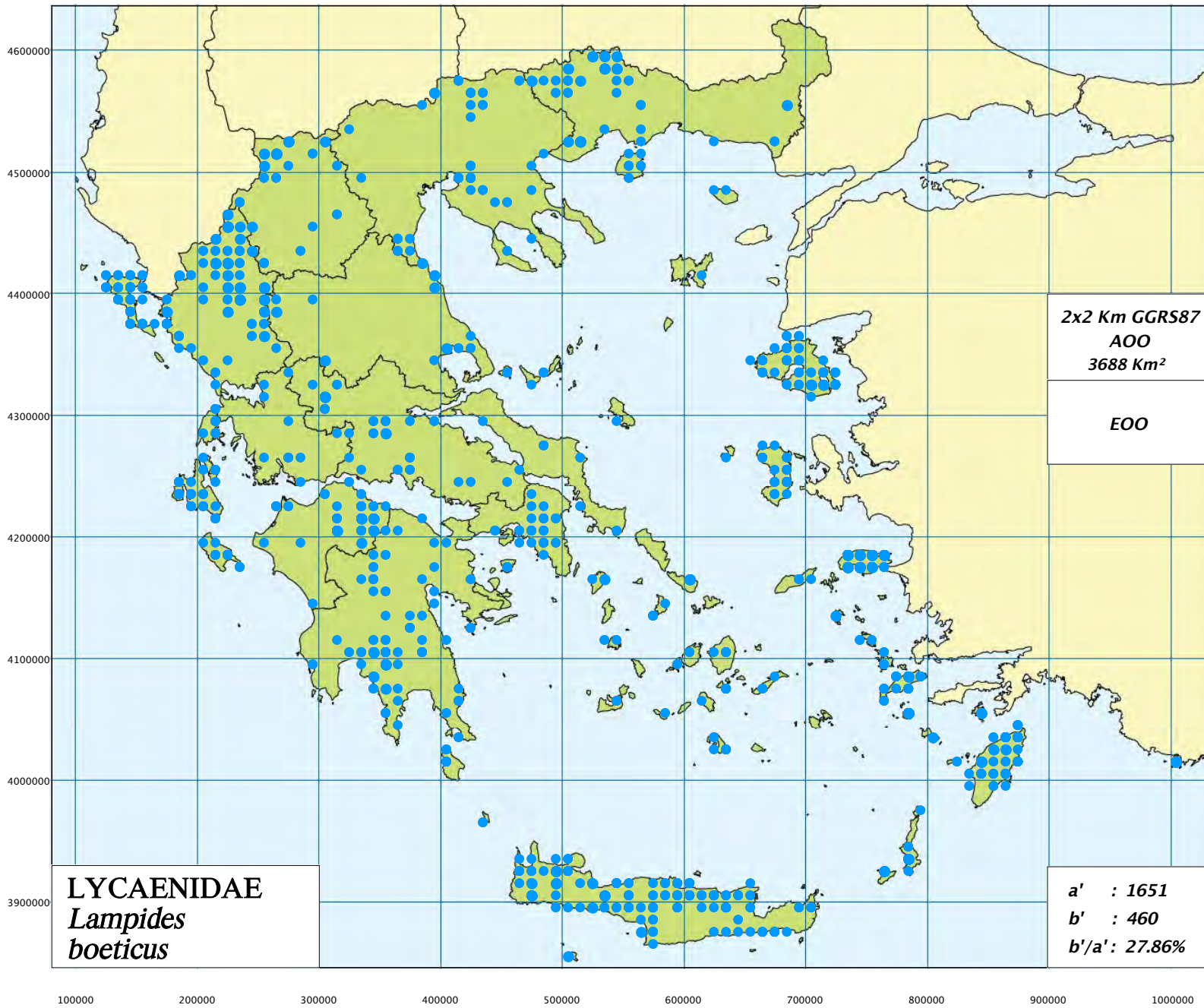


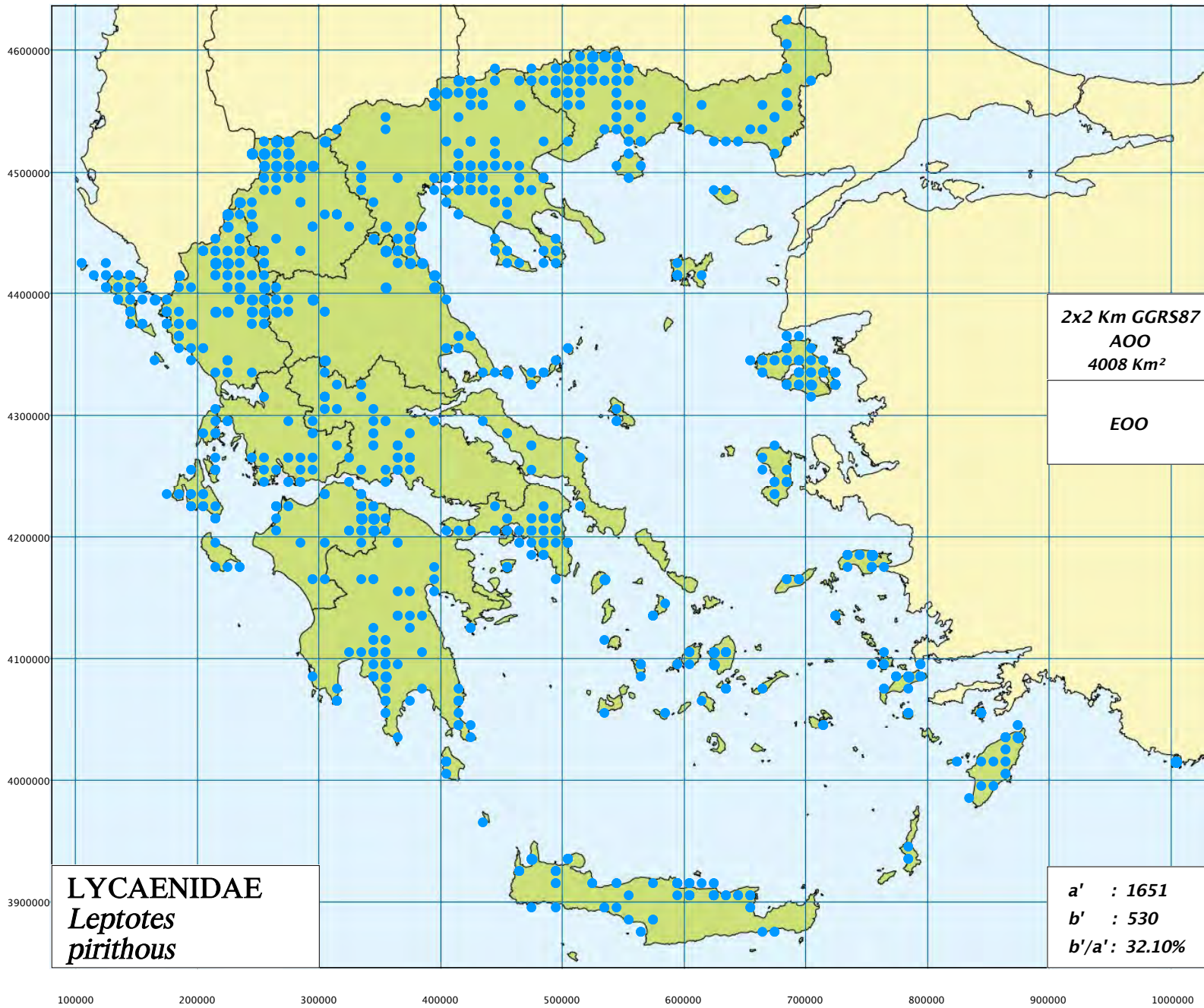
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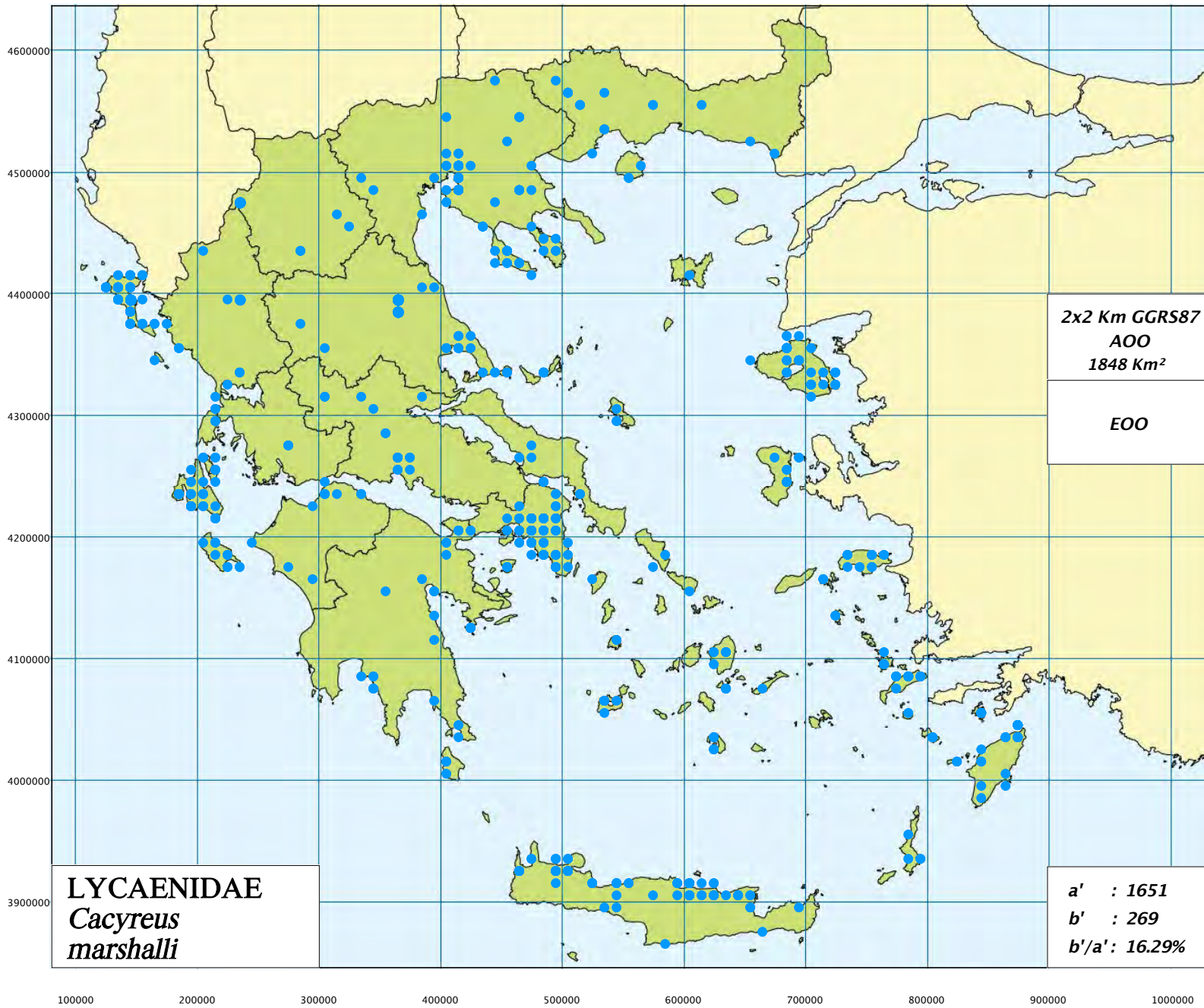


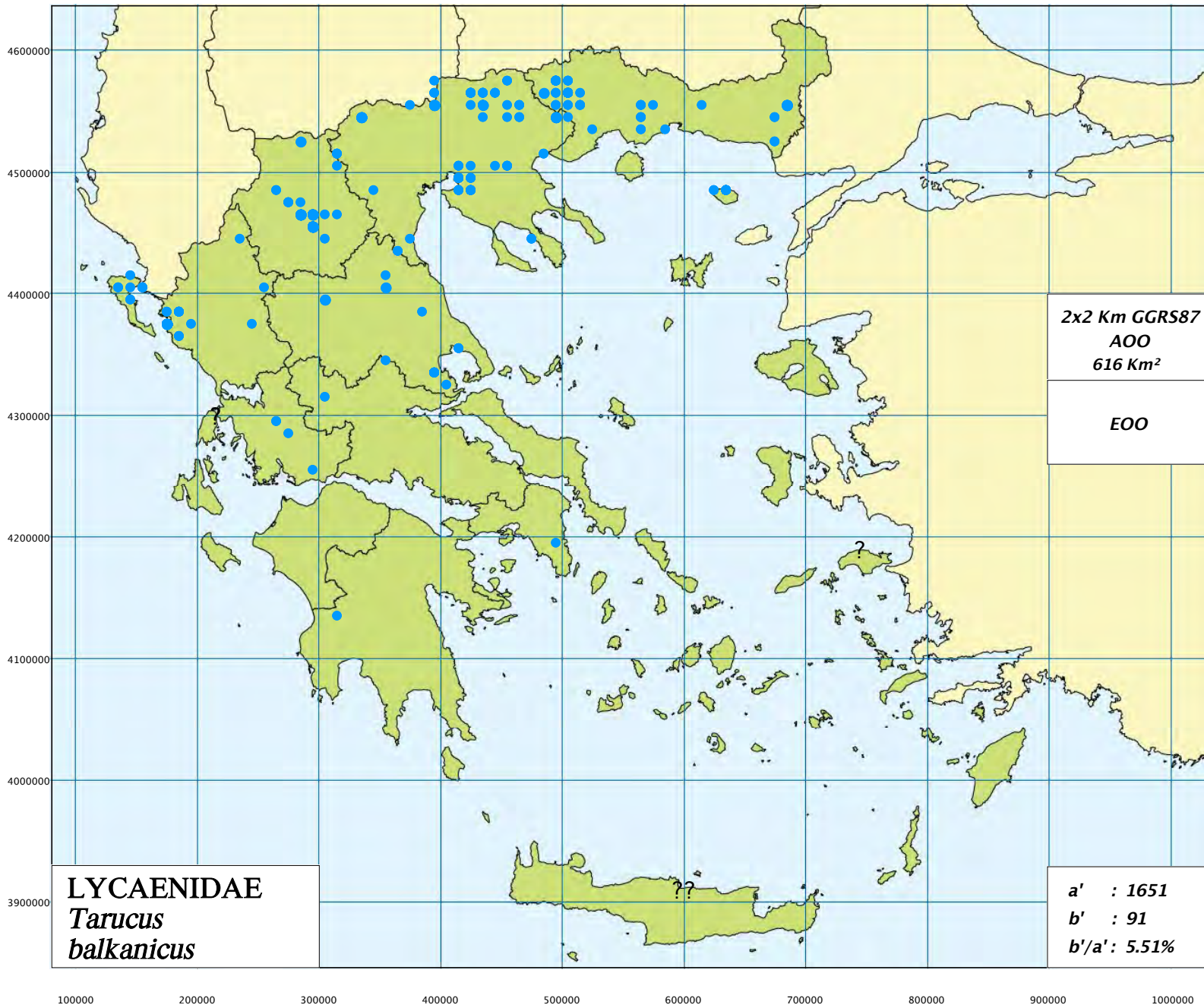
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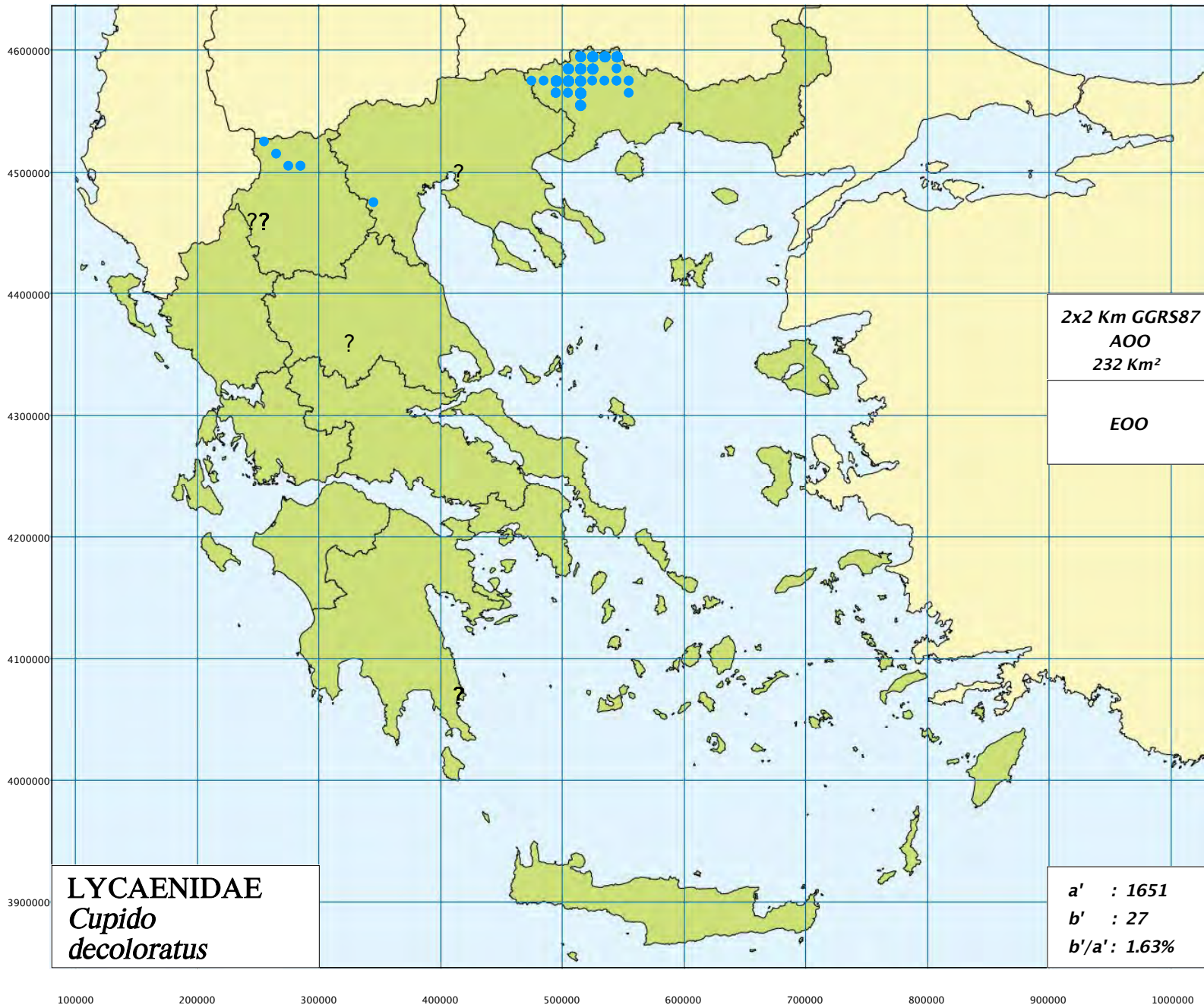












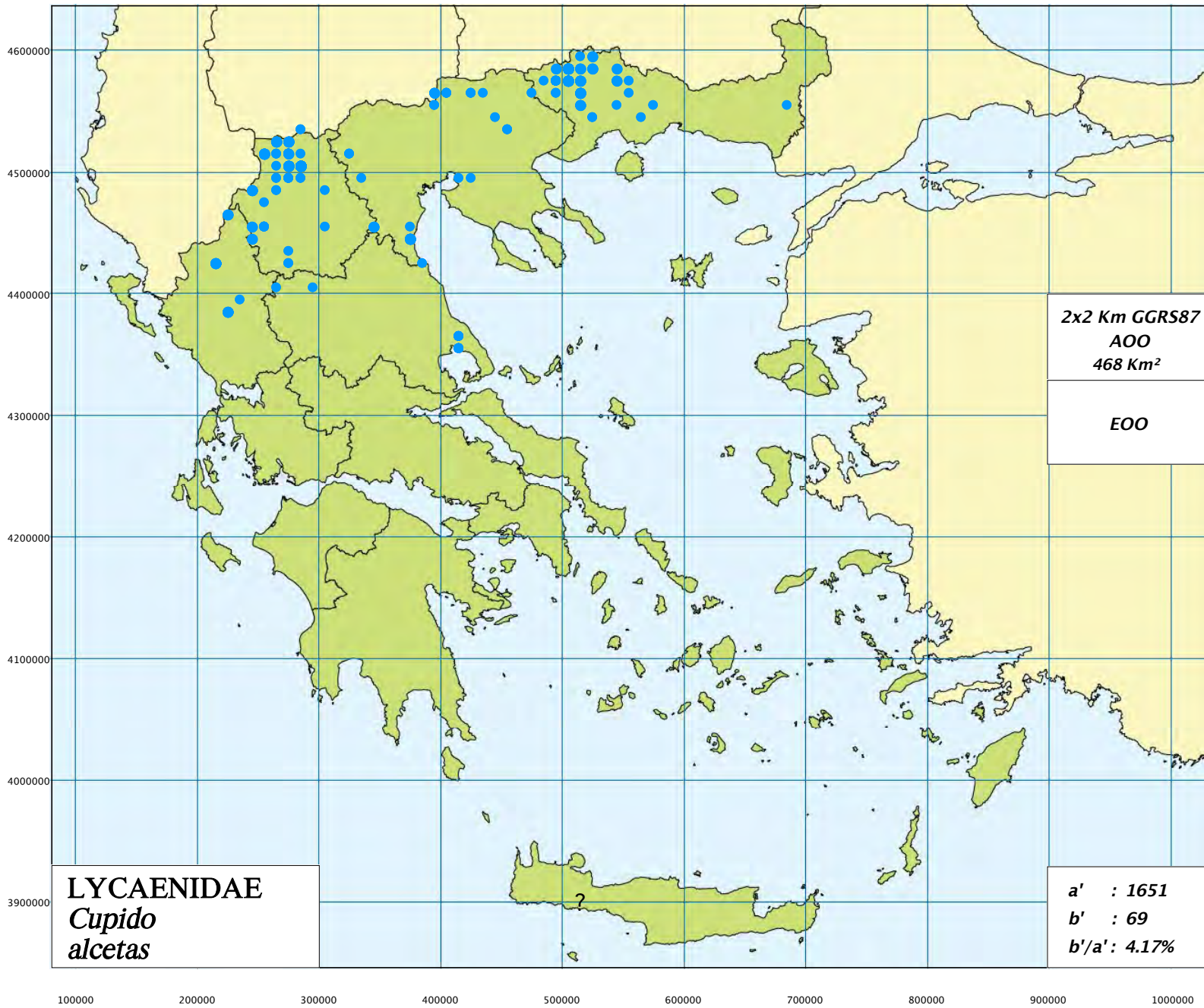
2x2 Km GGRS87
 AOO
 232 Km²

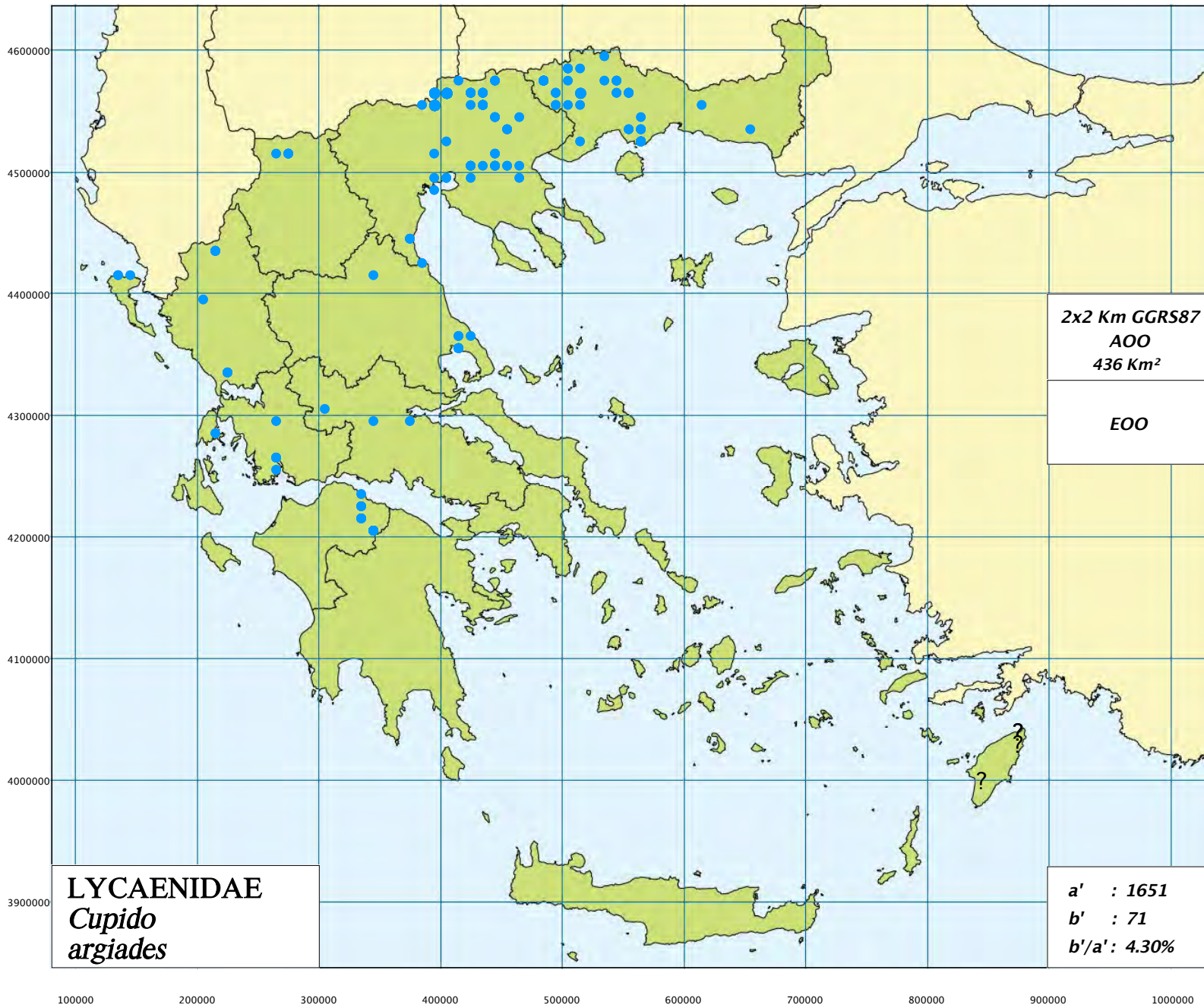
EOO

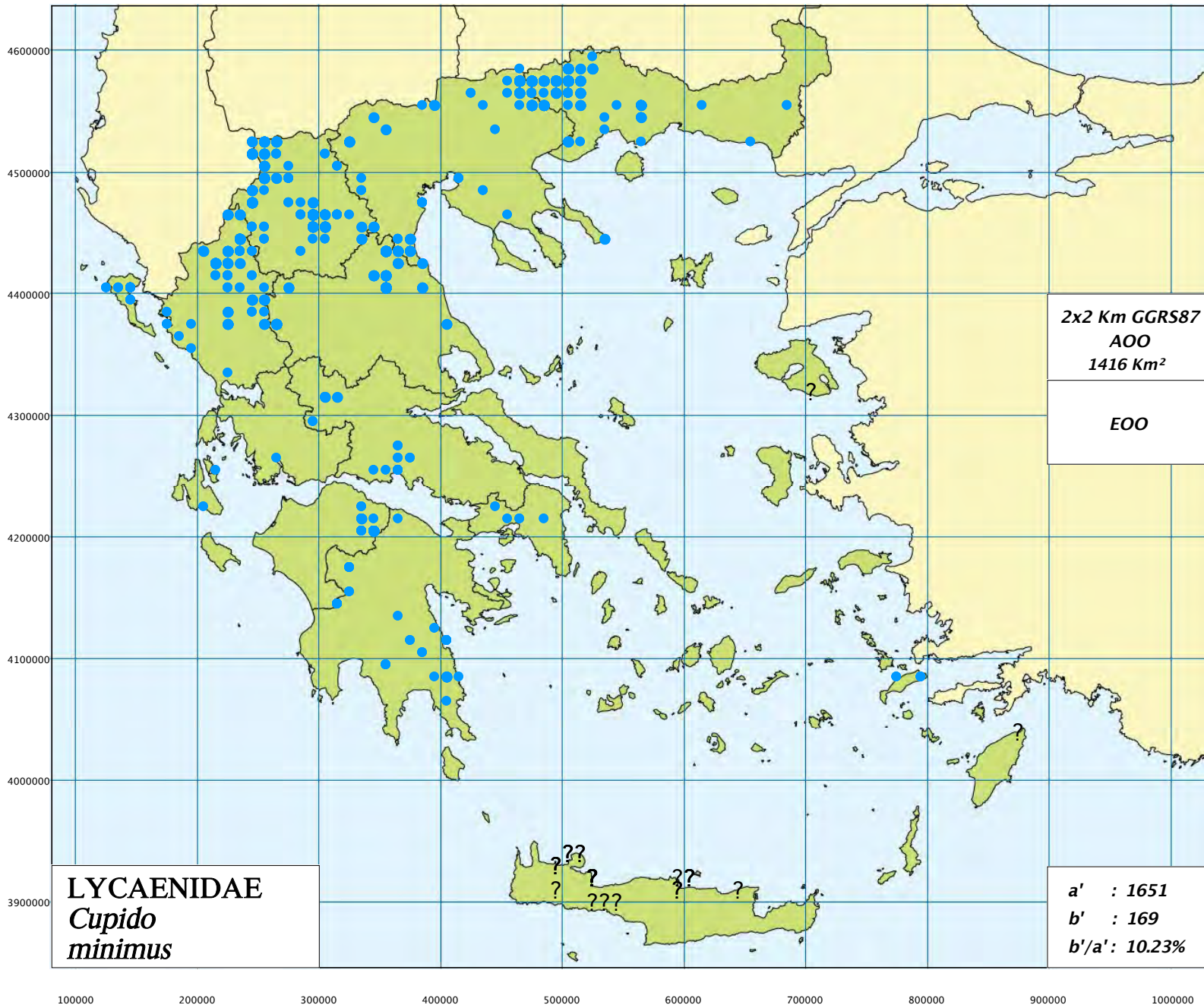
LYCAENIDAE
Cupido
decoloratus

a' : 1651
b' : 27
b'/a' : 1.63%

100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000





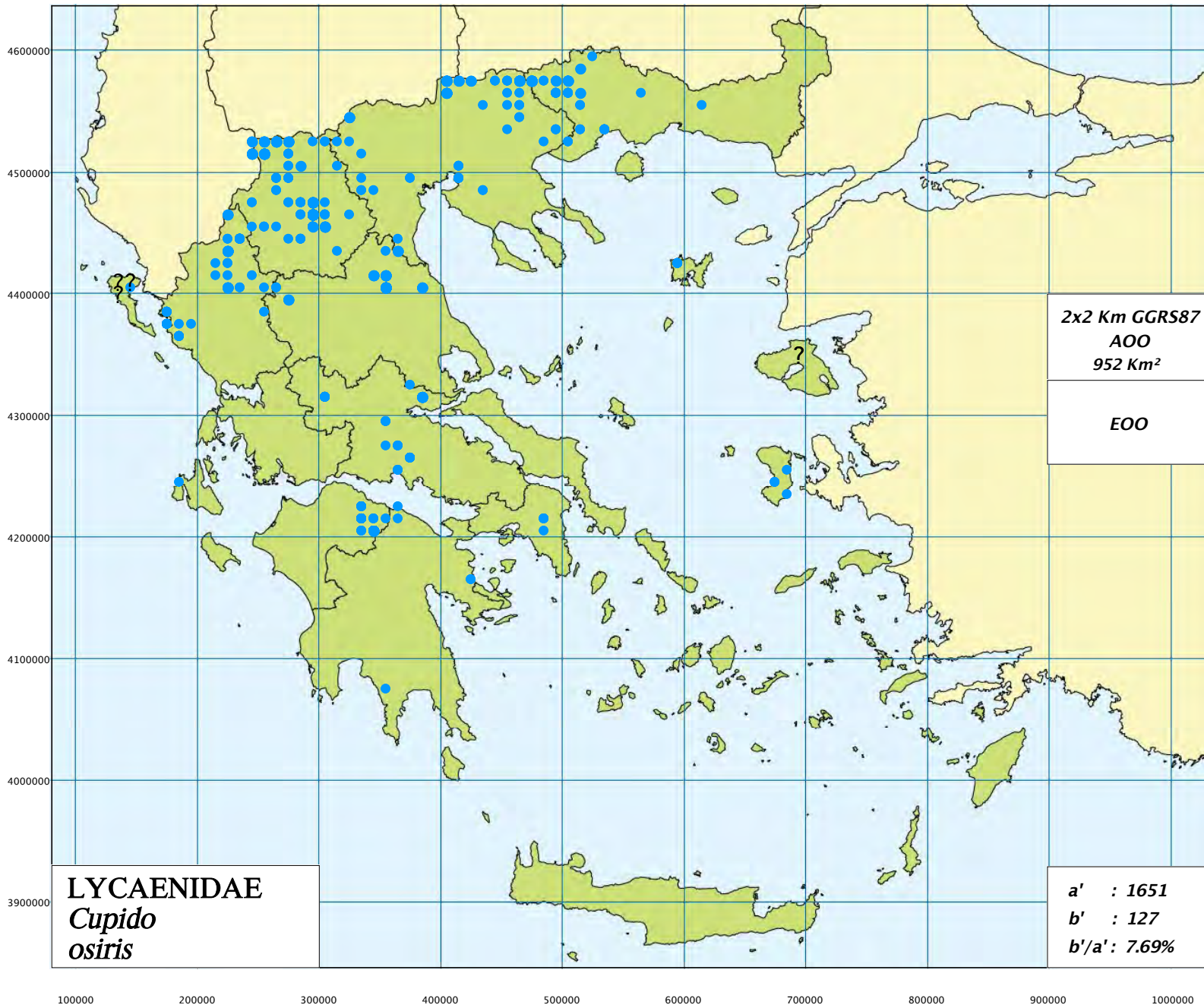


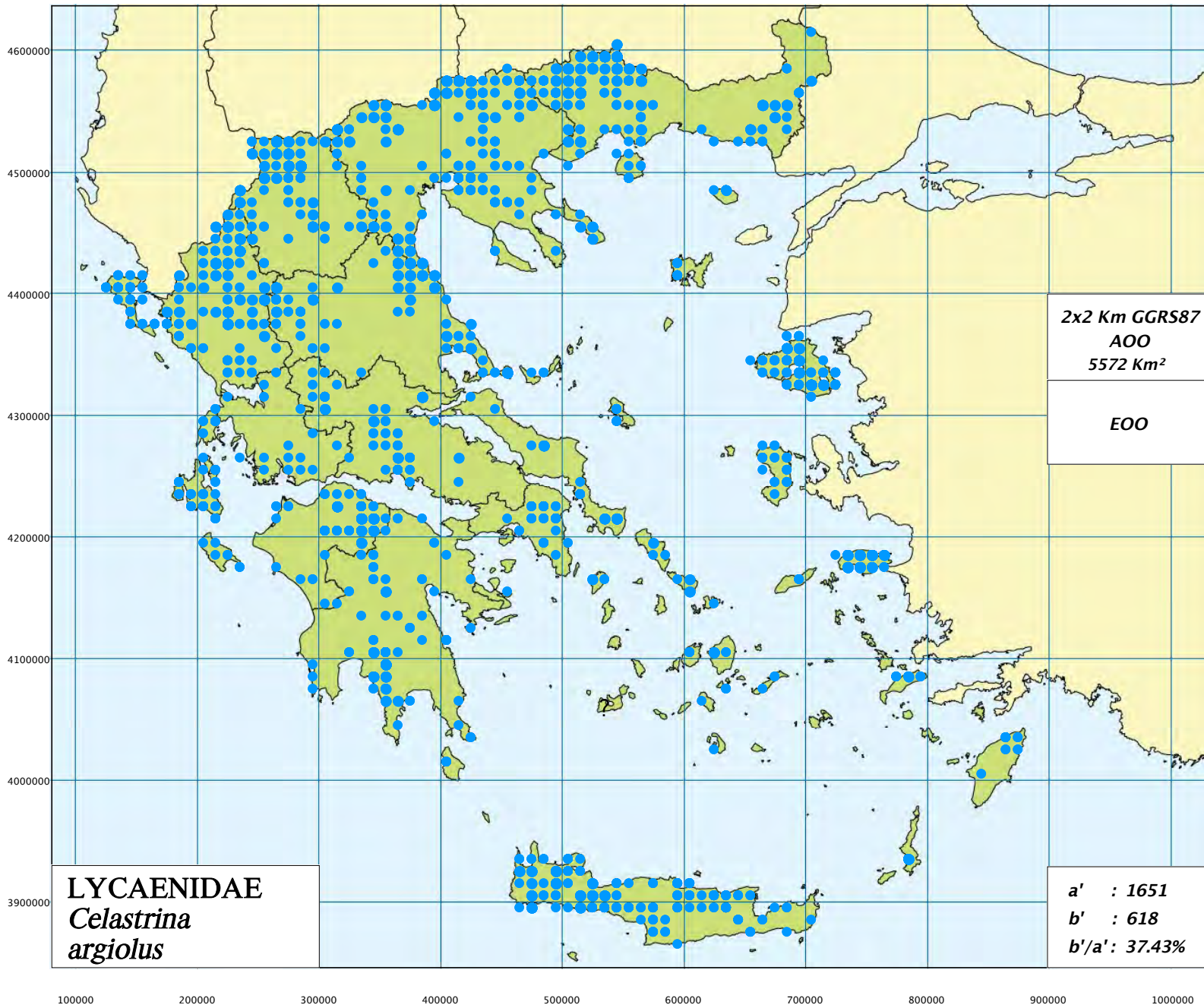
LYCAENIDAE
Cupido
minimus

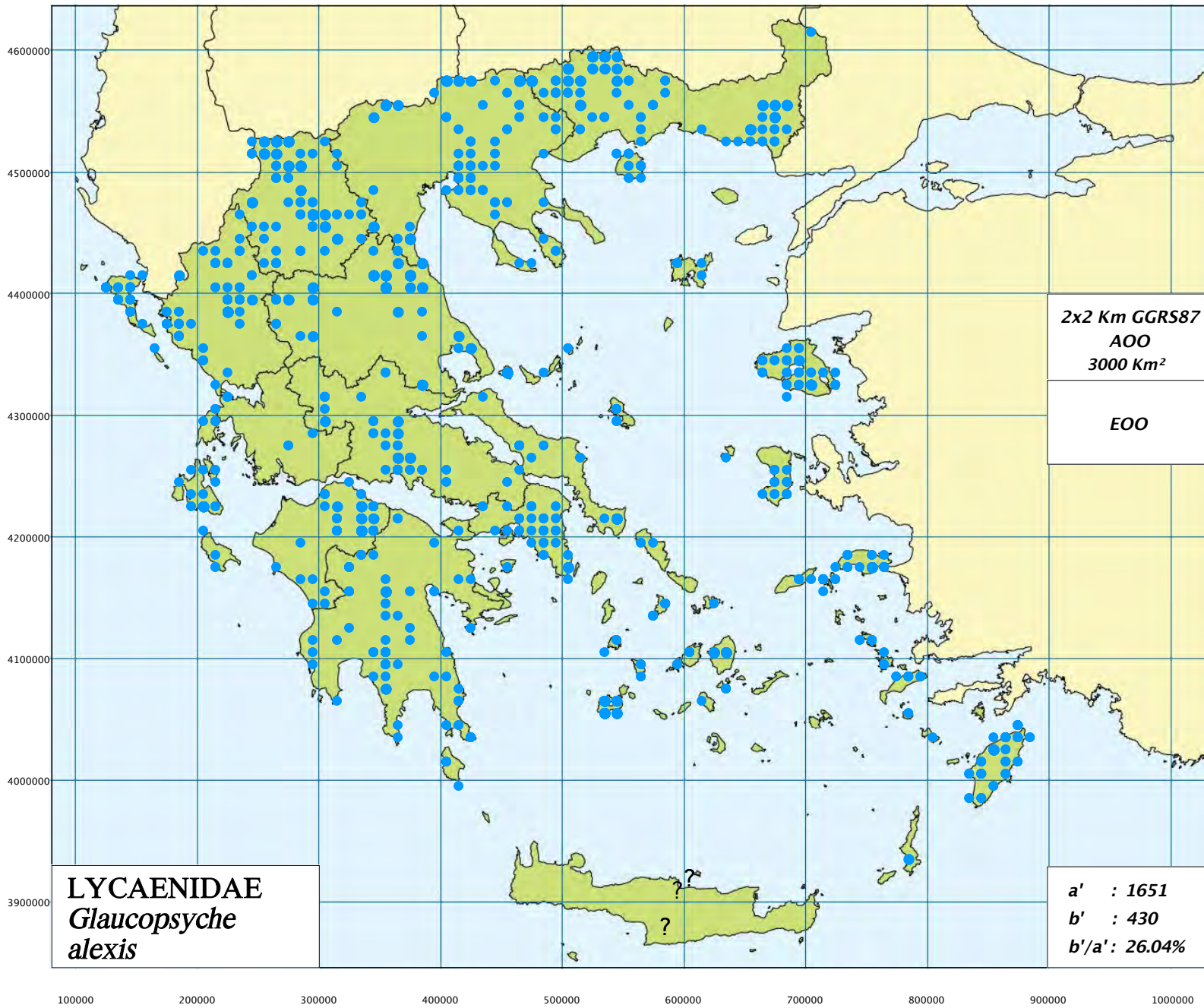
2x2 Km GGRS87
 AOO
 1416 Km²

EOO

a' : 1651
 b' : 169
 b'/a' : 10.23%



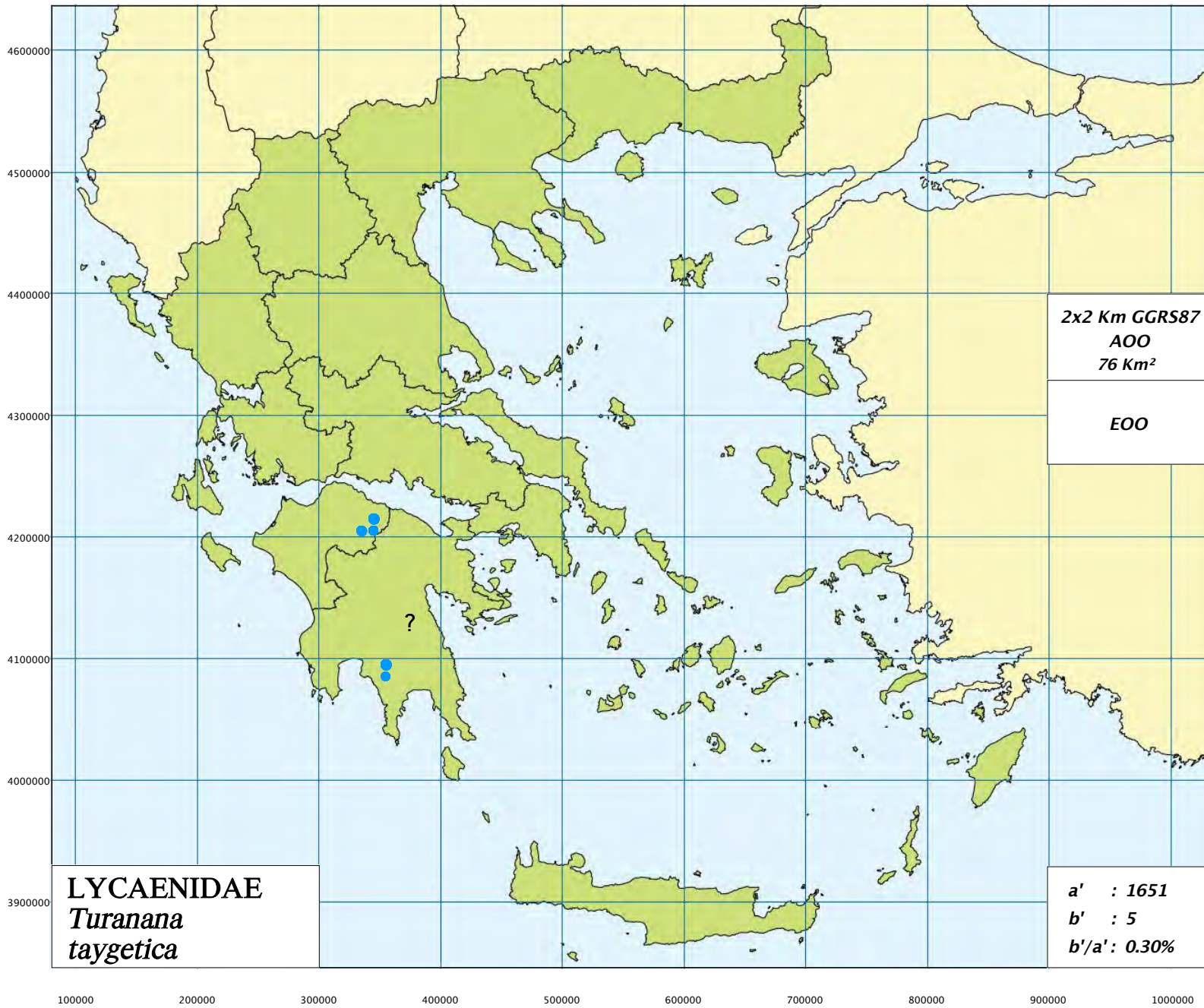




LYCAENIDAE
Glaucopsyche alexis

2x2 Km GGRS87
 AOO
 3000 Km²
 EOO

a' : 1651
b' : 430
b'/a' : 26.04%



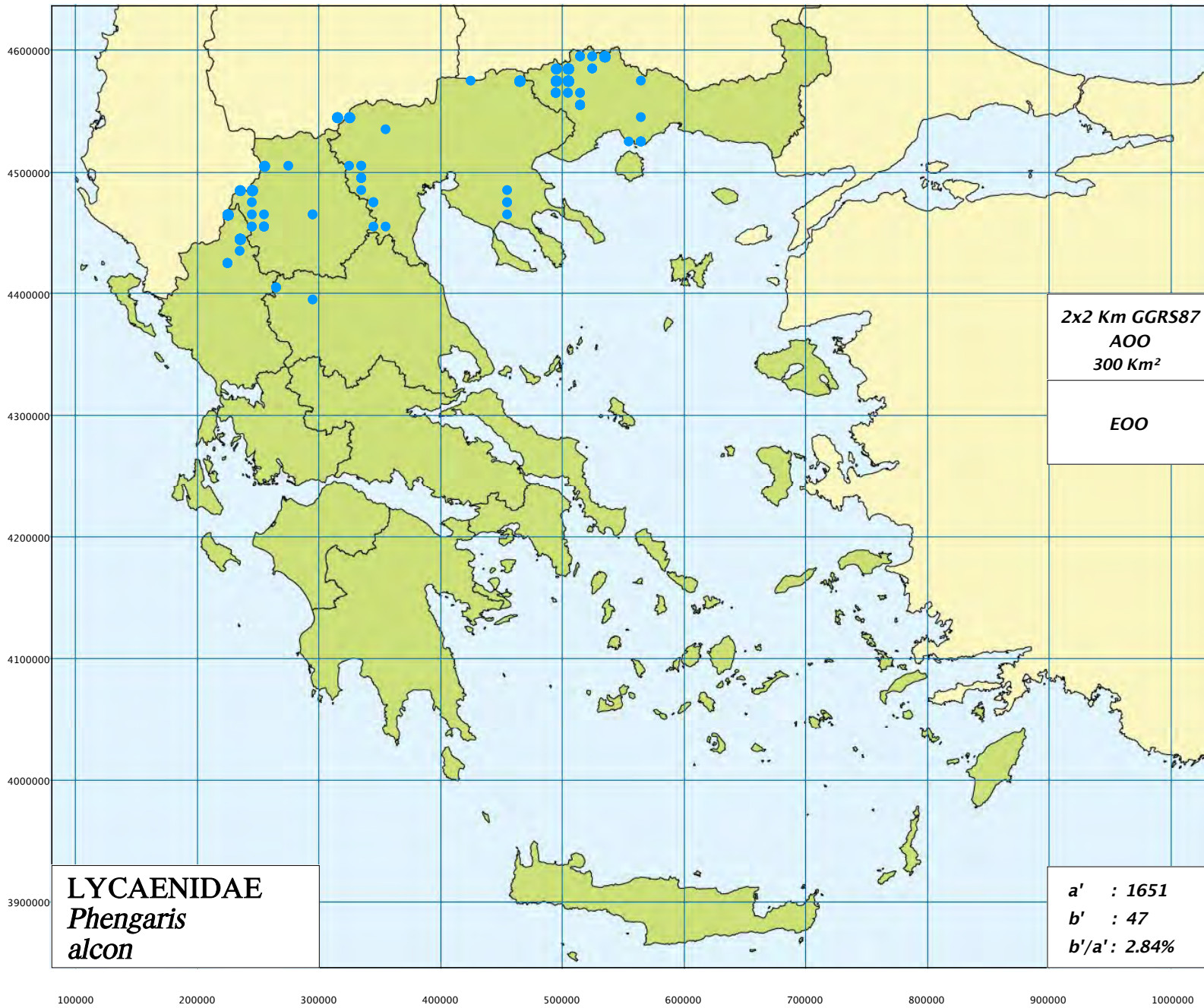
LYCAENIDAE
Turanana
taygetica

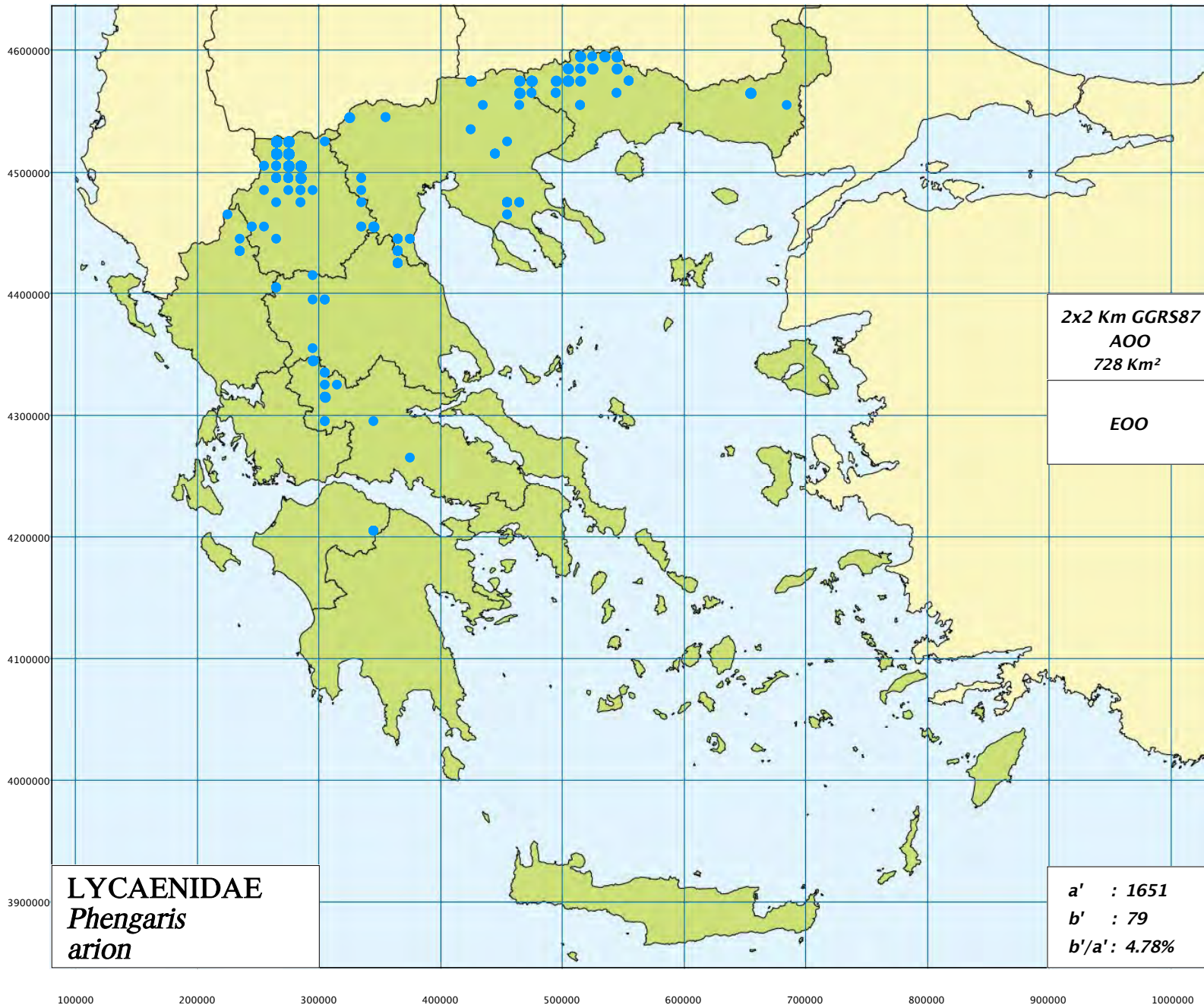
2x2 Km GGRS87
AOO
76 Km²

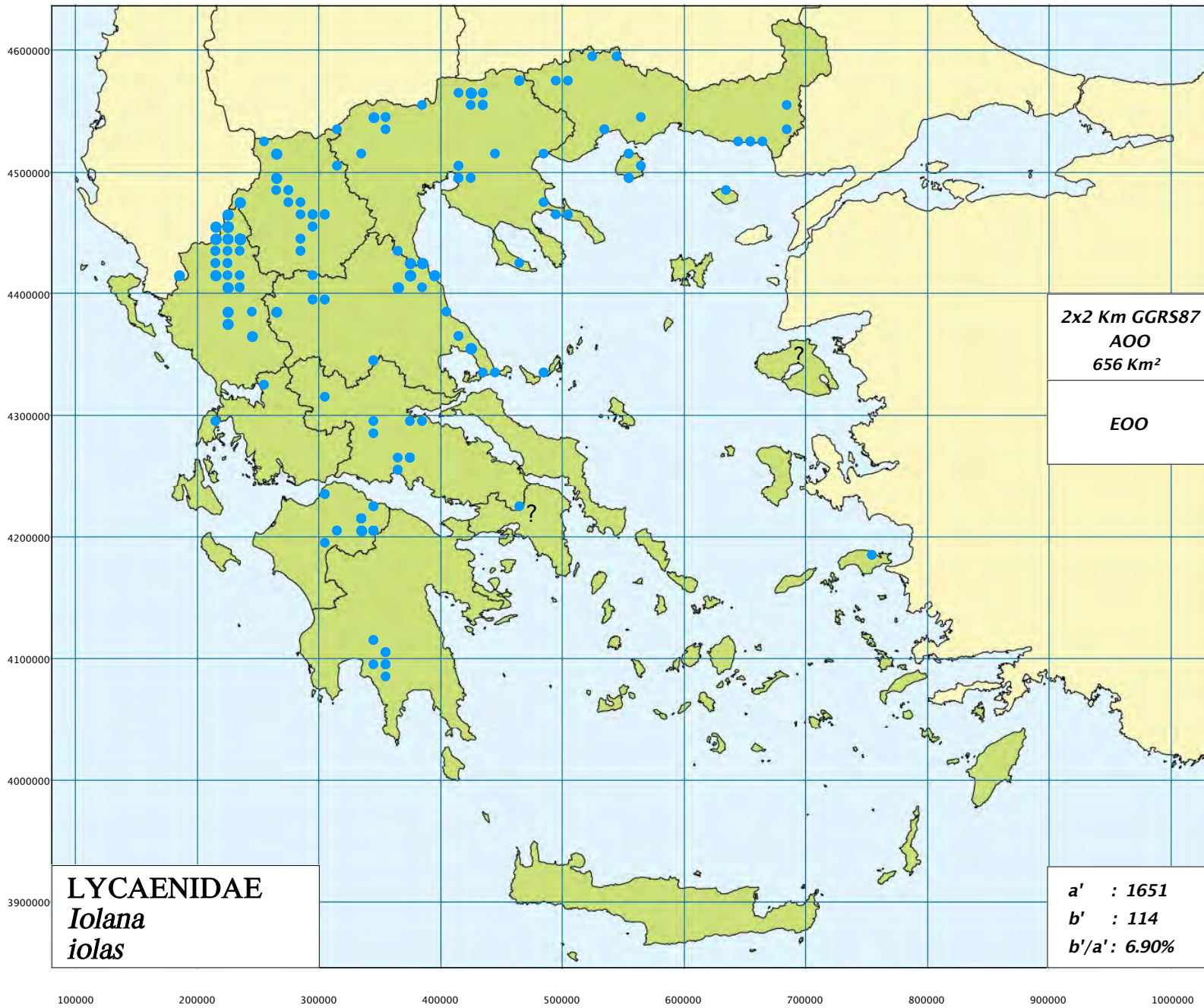
EOO

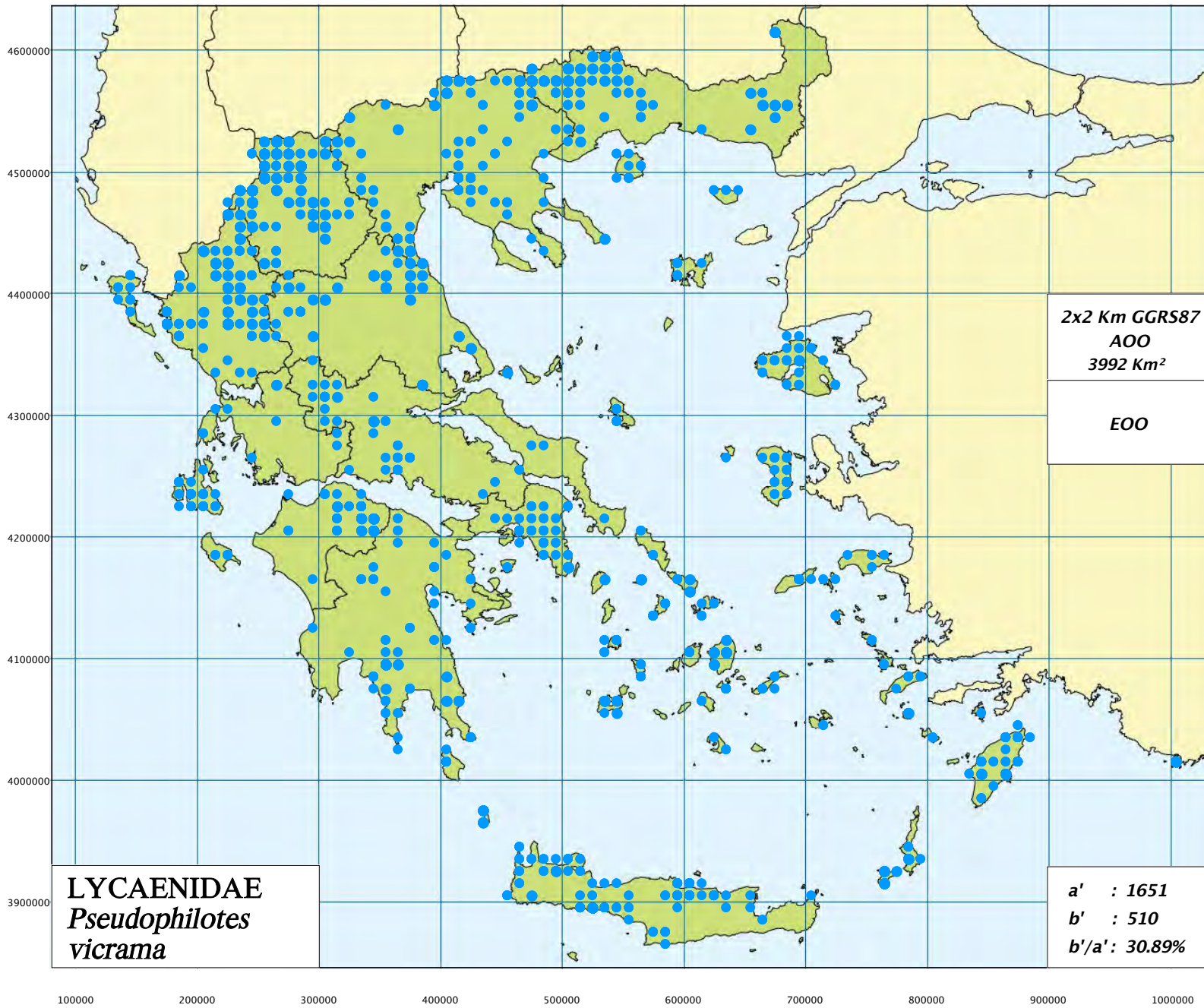
a' : 1651
b' : 5
b'/a' : 0.30%

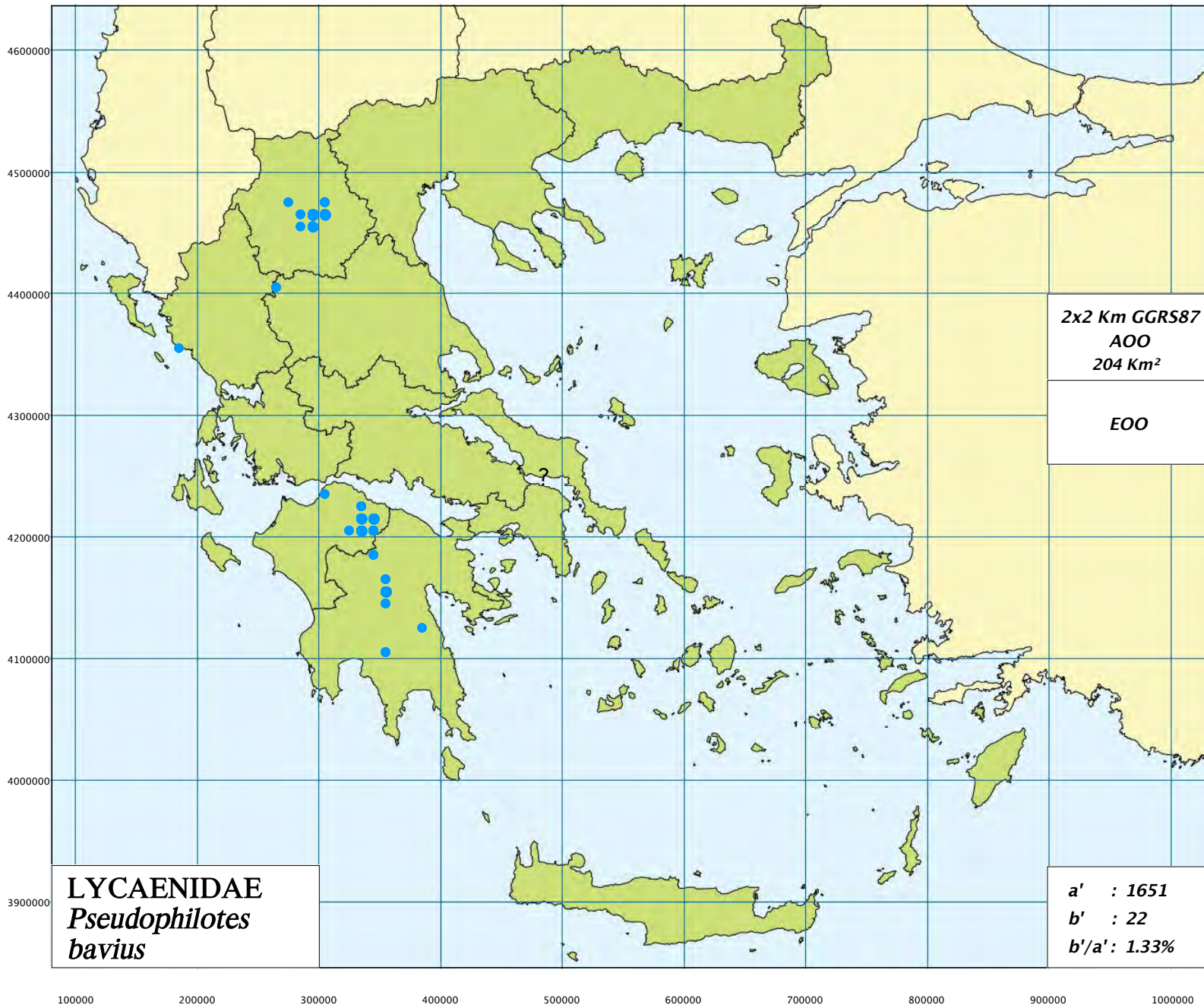
100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000

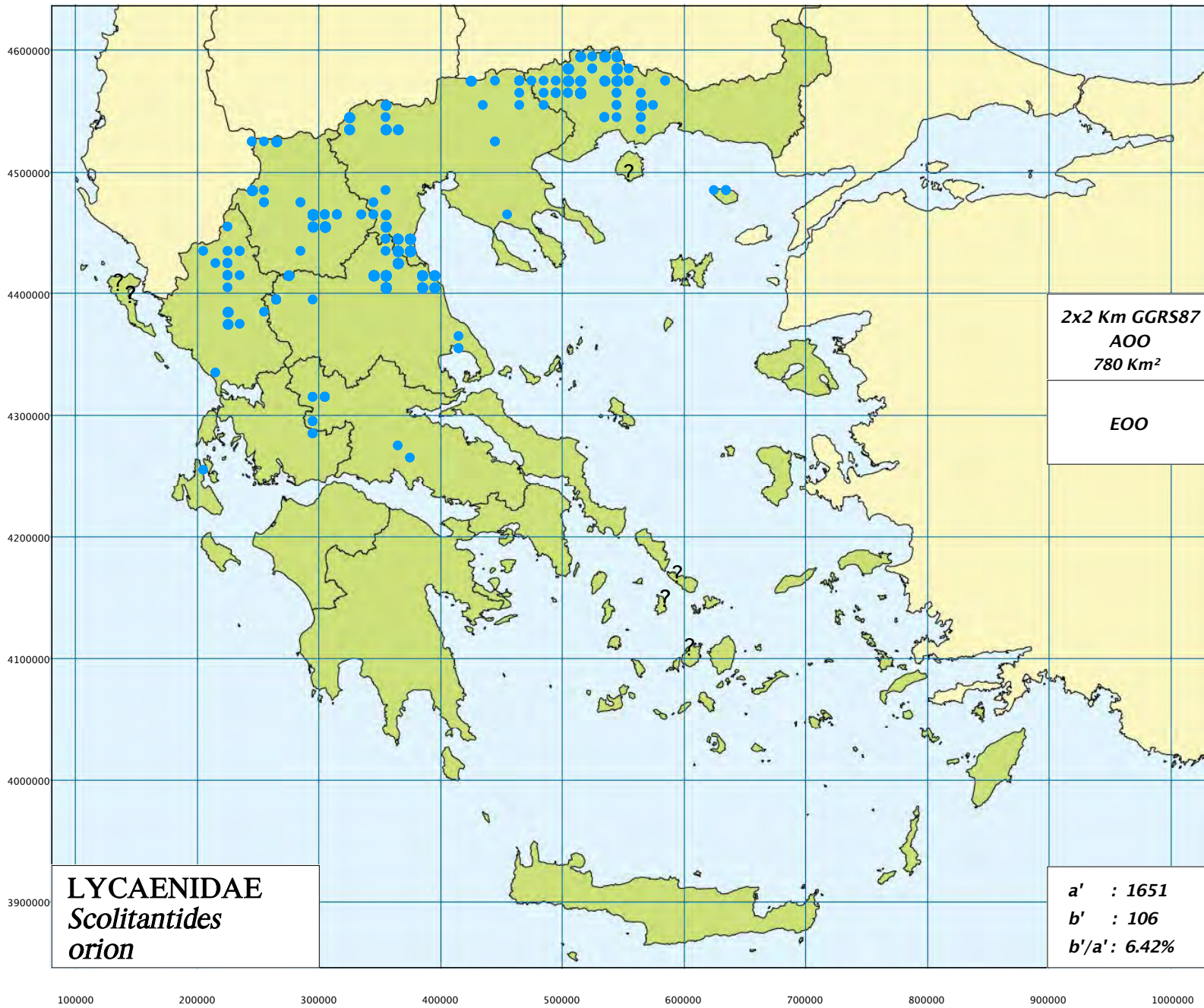


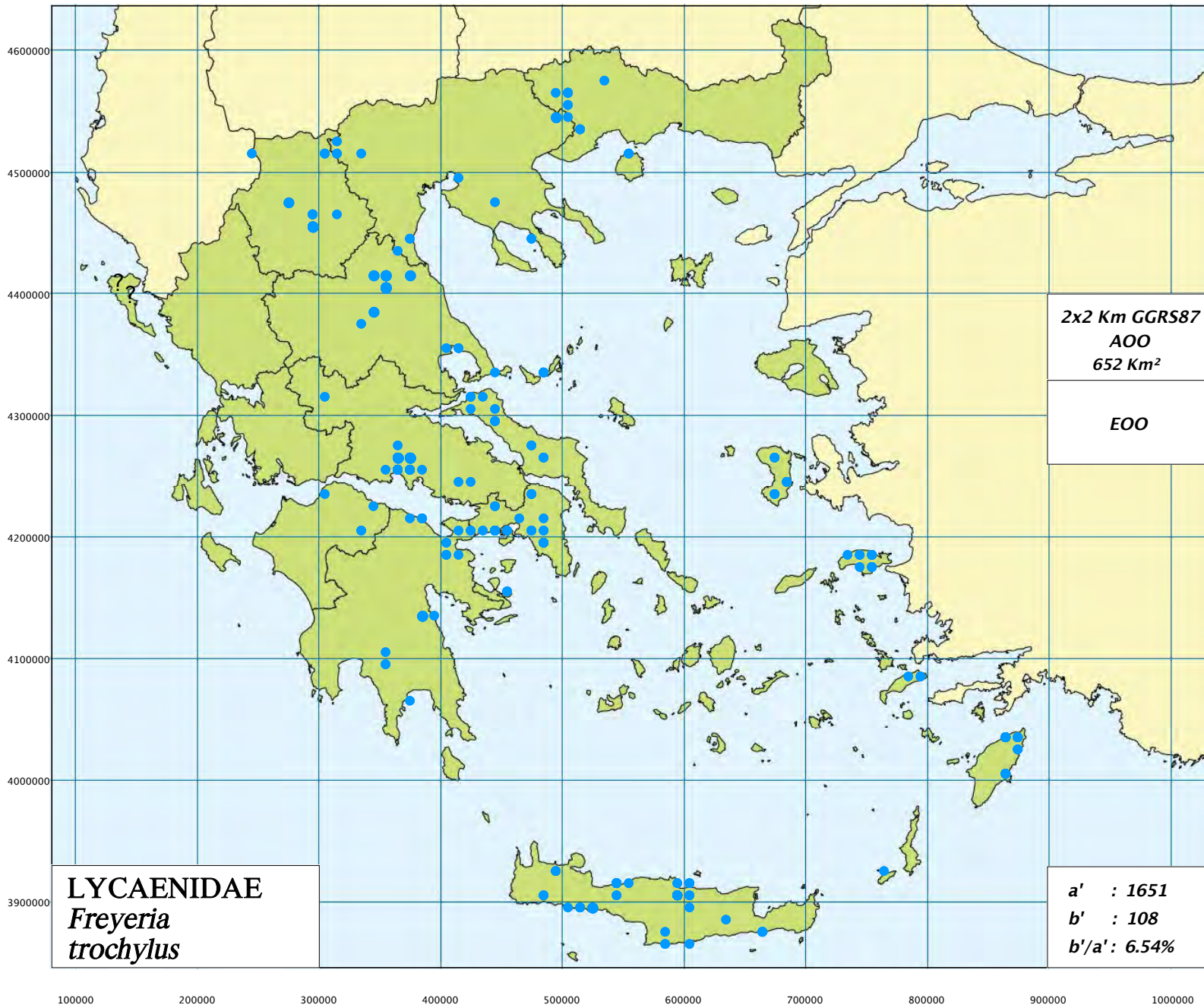










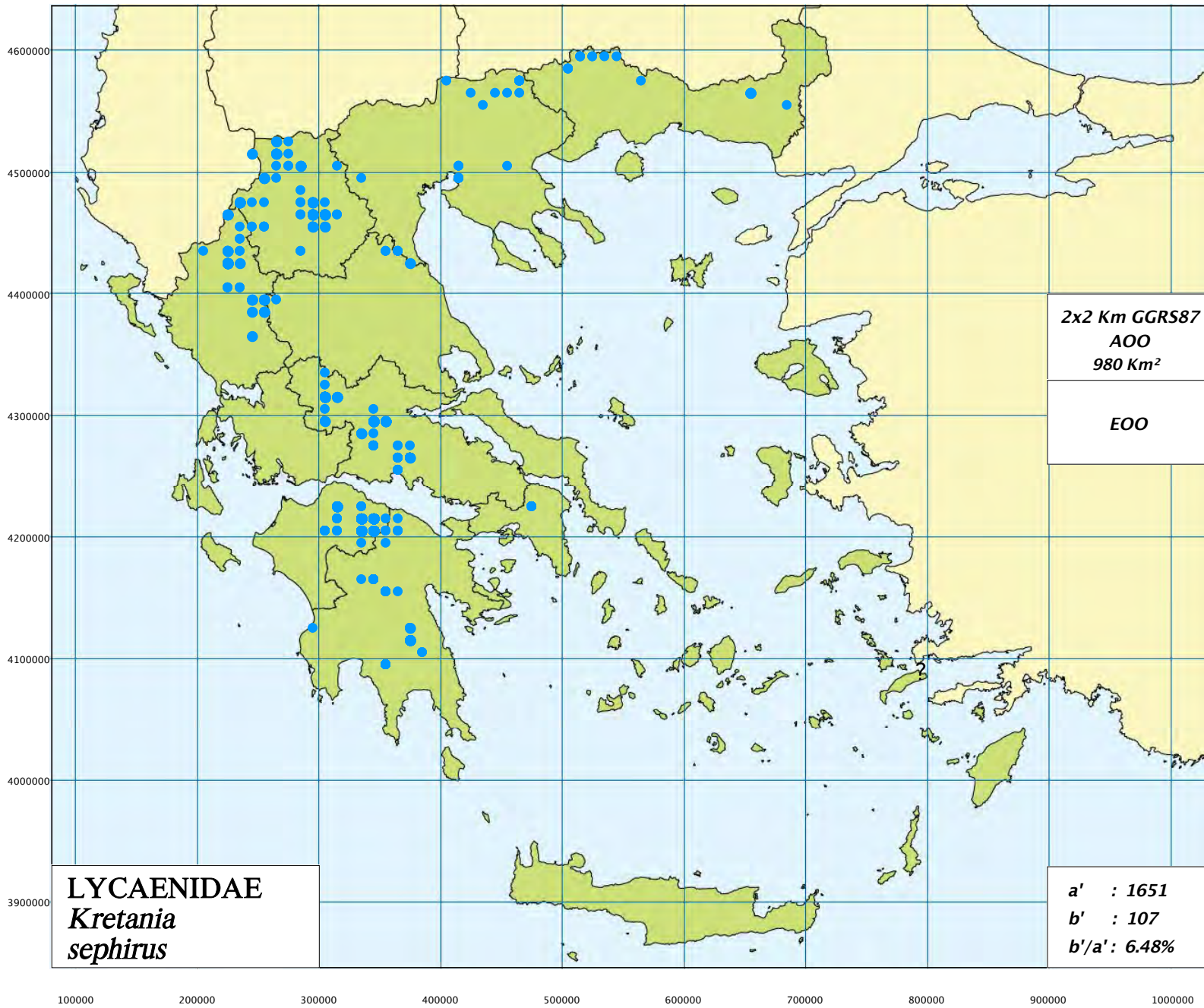


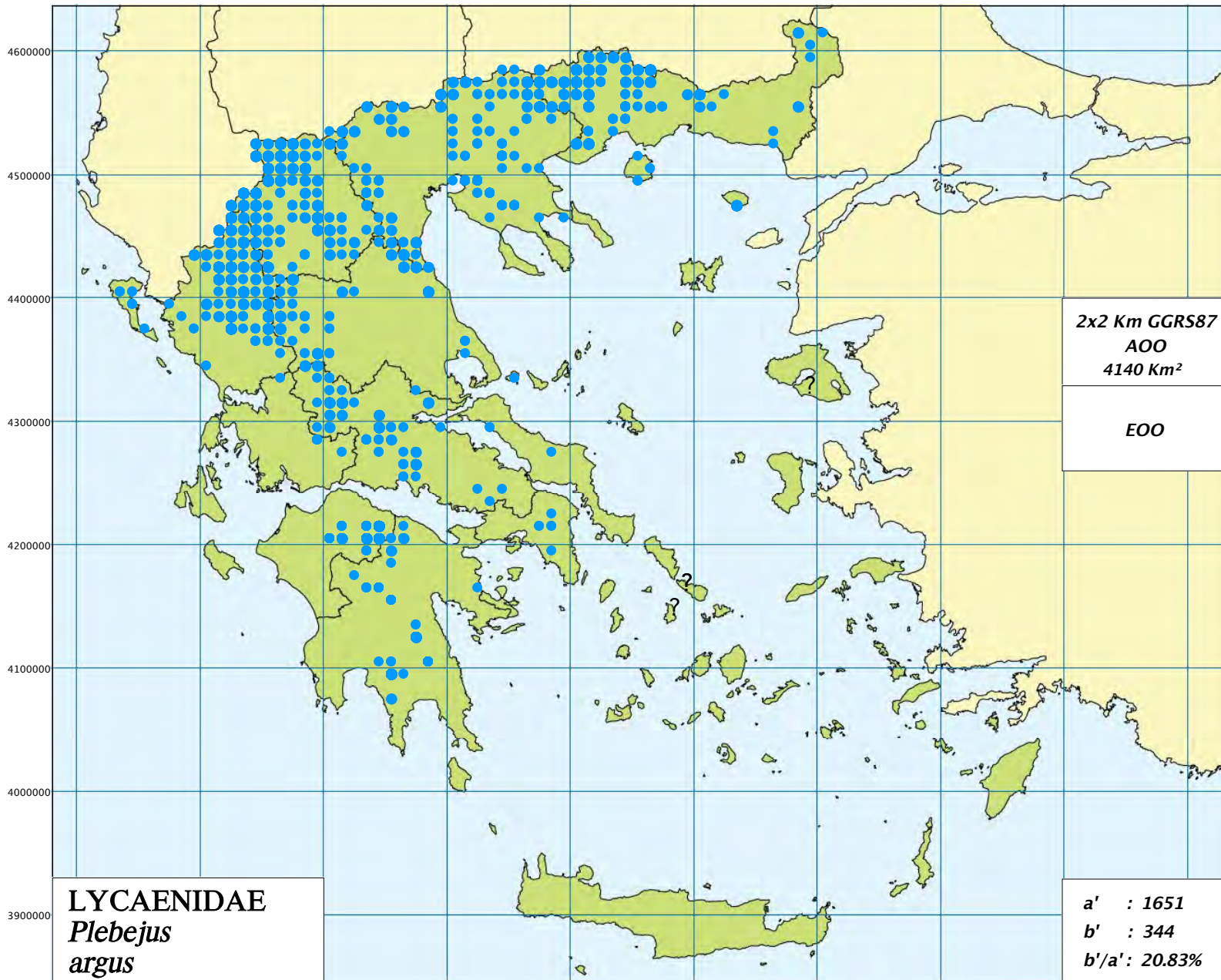
2x2 Km GGRS87
 AOO
 652 Km²

EOO

LYCAENIDAE
Freyeria
trochylus

a' : 1651
 b' : 108
 b'/a' : 6.54%



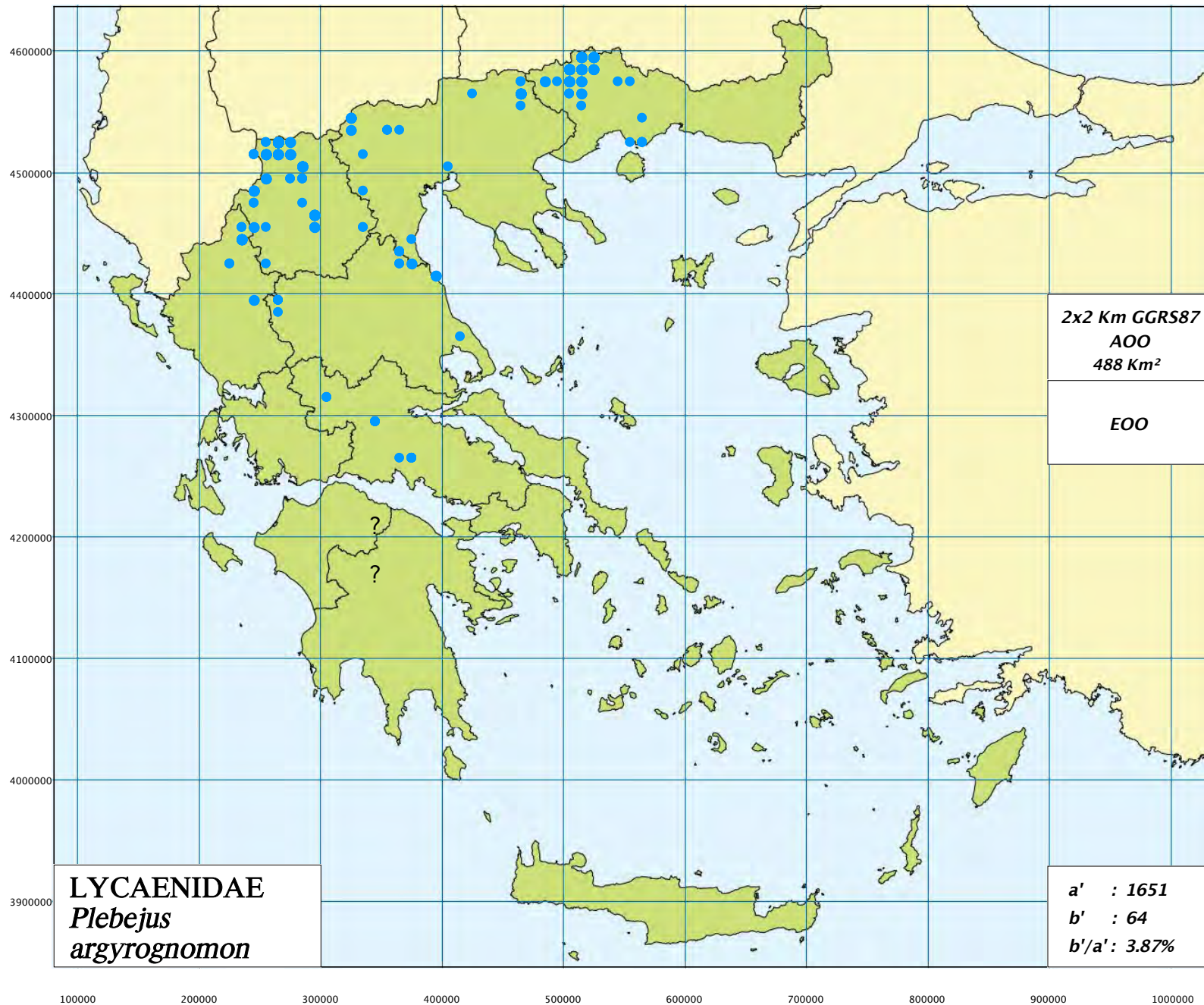


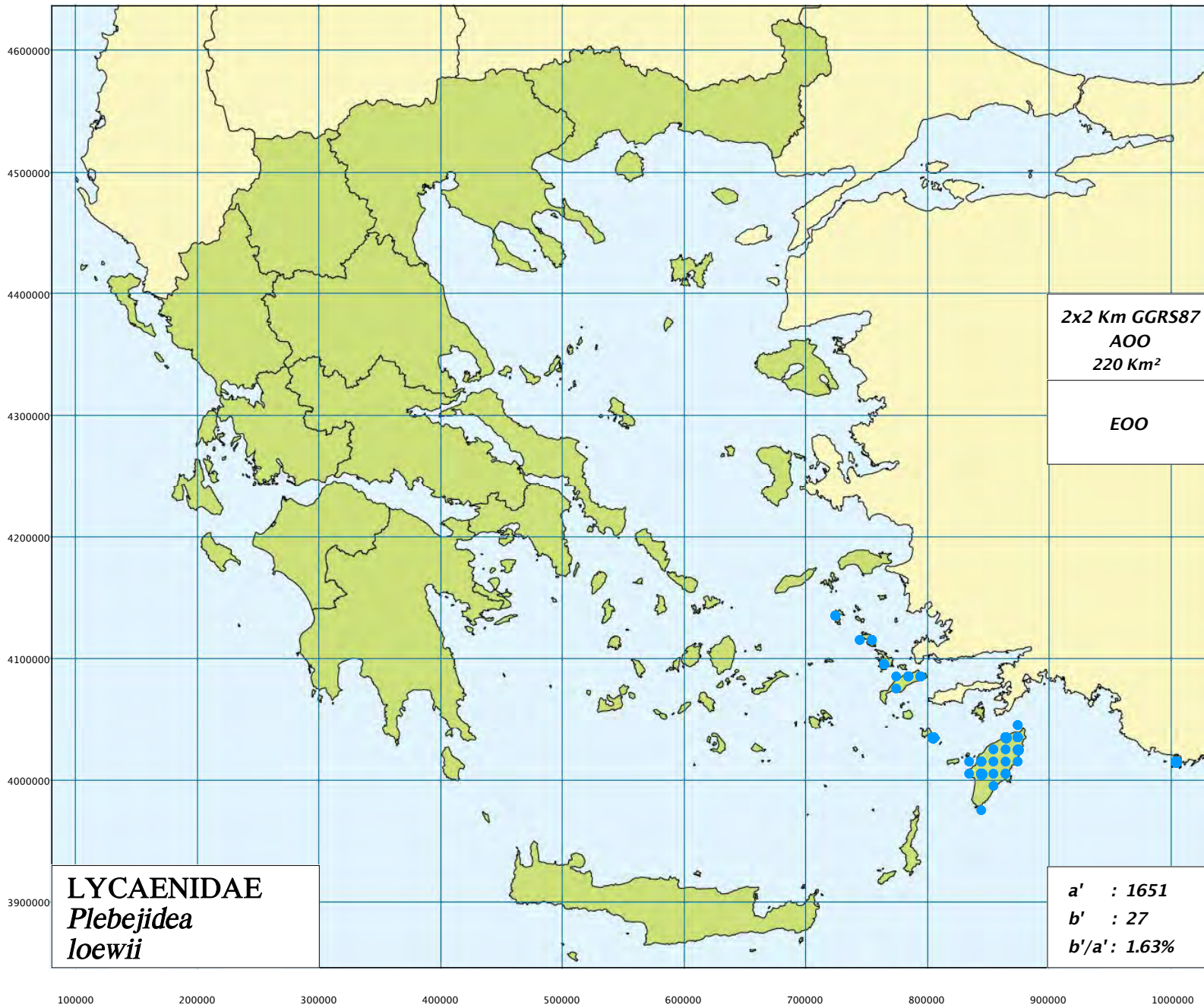
100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000

https://www.pamperis.gr/PHOTOGRAPHS/Plebejus_argus_idas_argyrognomon_complex.html

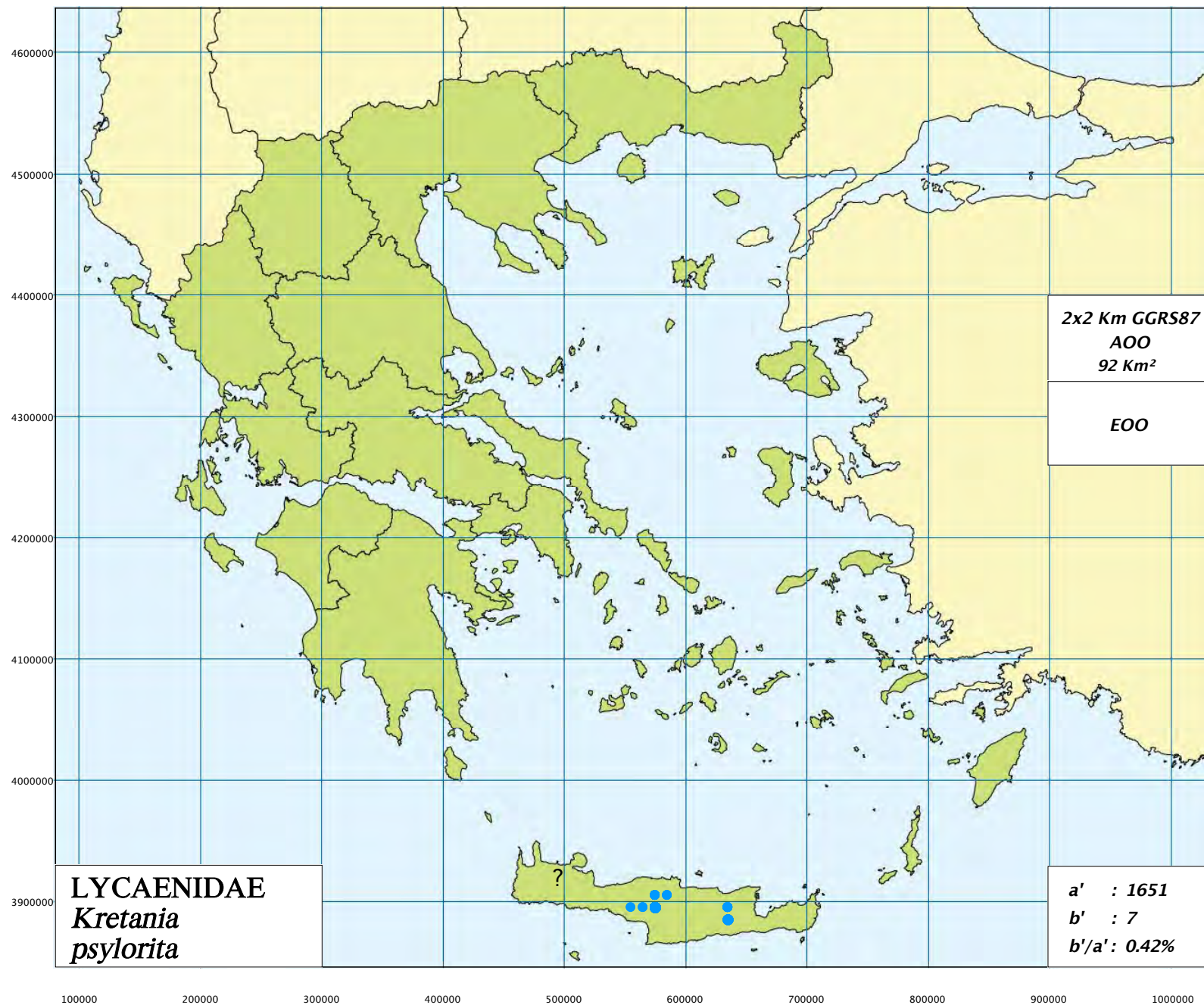


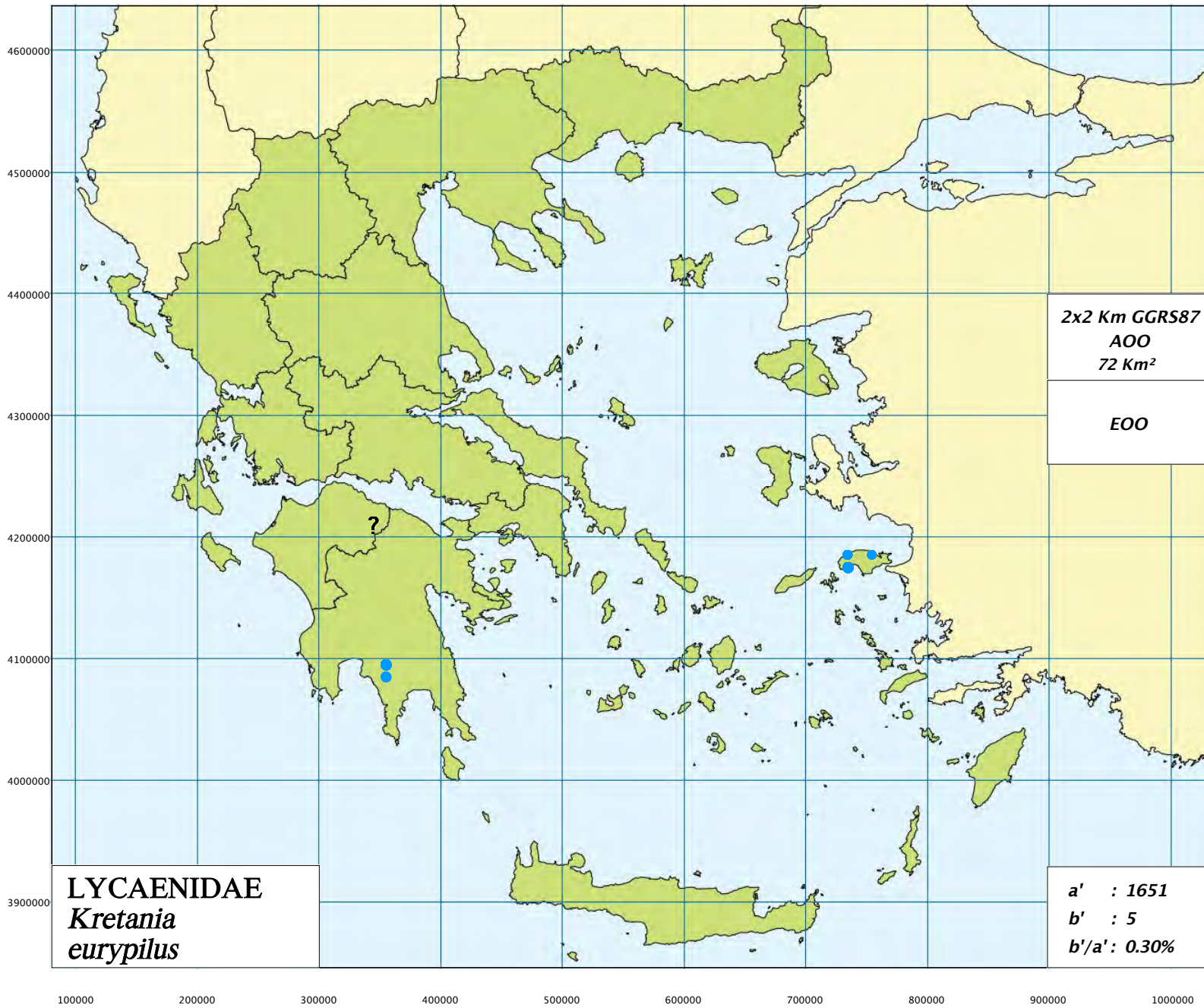
https://www.pamperis.gr/PHOTOGRAPHS/Plebejus_argus_idas_argyrognomon_complex.html





ΕΝΔΗΜΙΚΟ ΕΙΔΟΣ ΤΗΣ ΕΛΛΑΔΑΣ
 ENDEMIC SPECIES OF GREECE

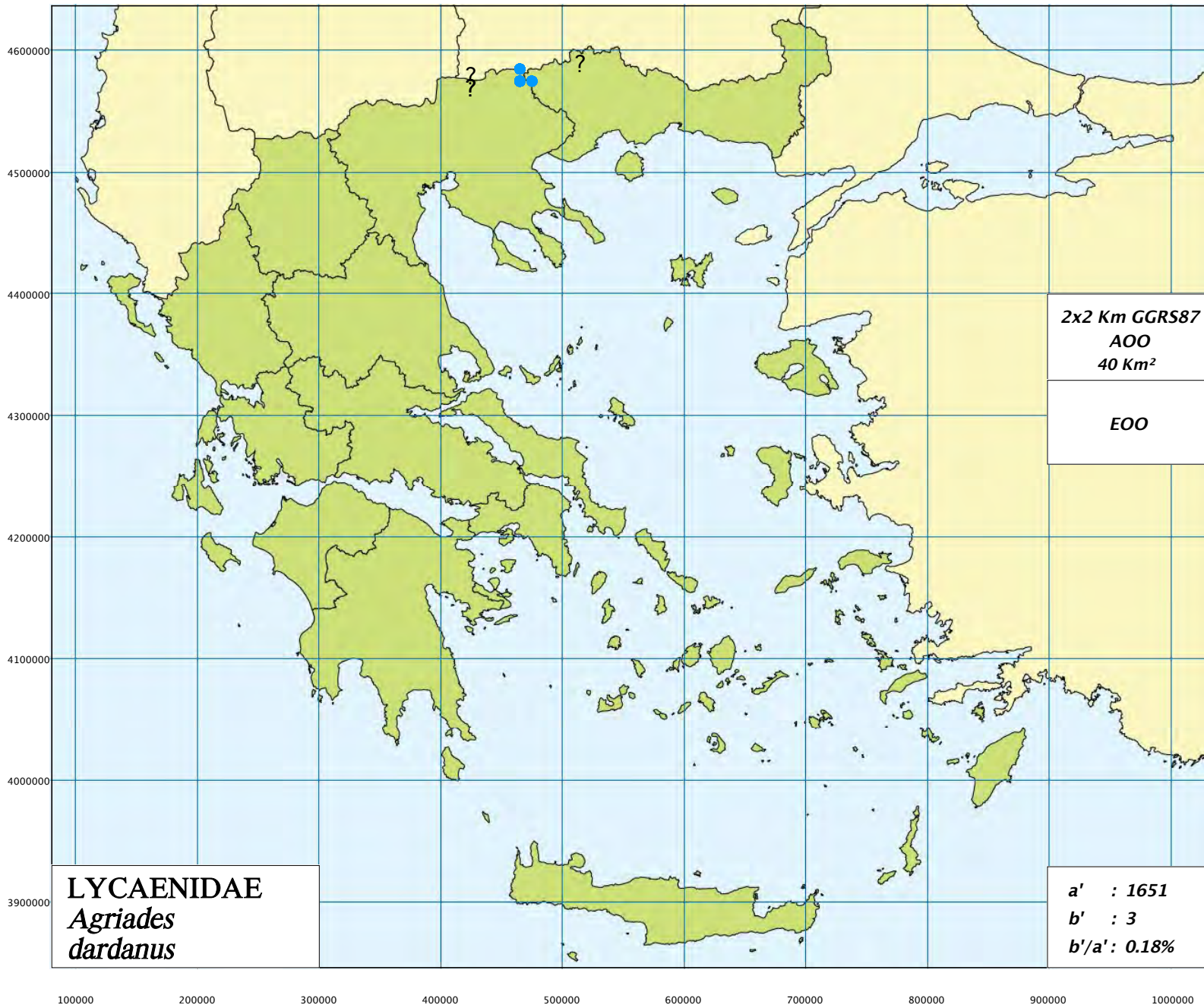


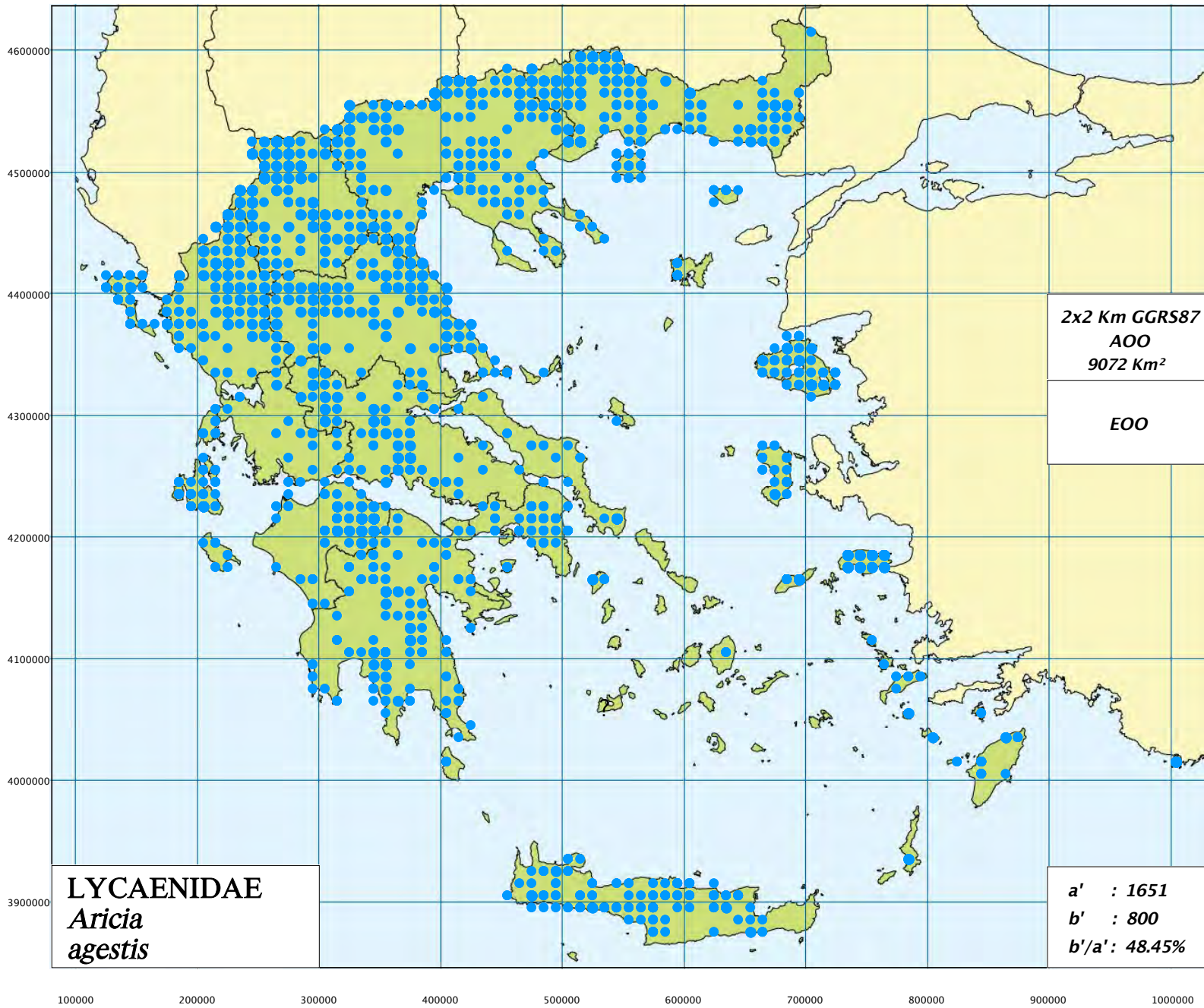


LYCAENIDAE
Kretania
eurypilus

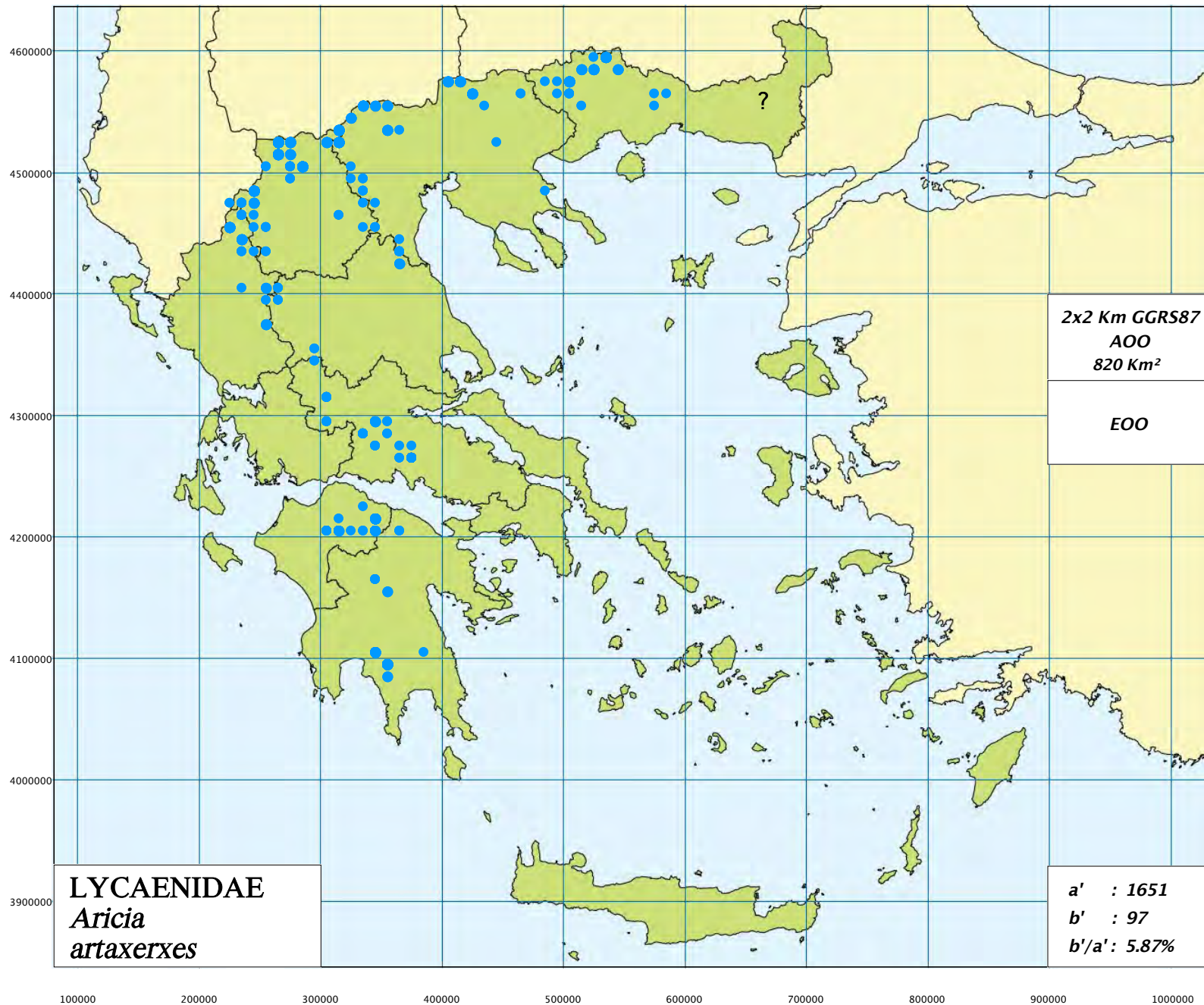
2x2 Km GGRS87
AOO
72 Km²
EOO

a' : 1651
b' : 5
b'/a' : 0.30%

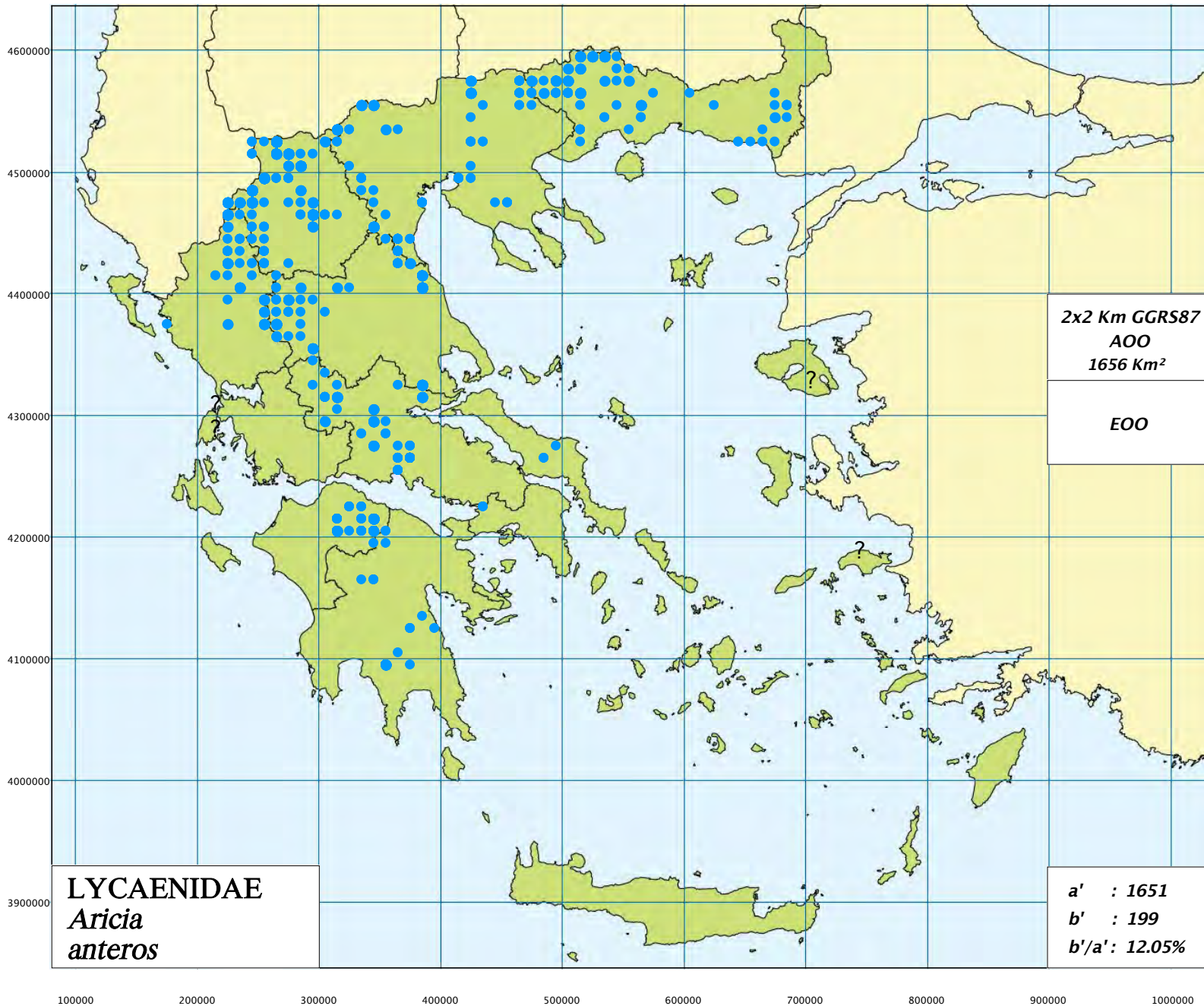




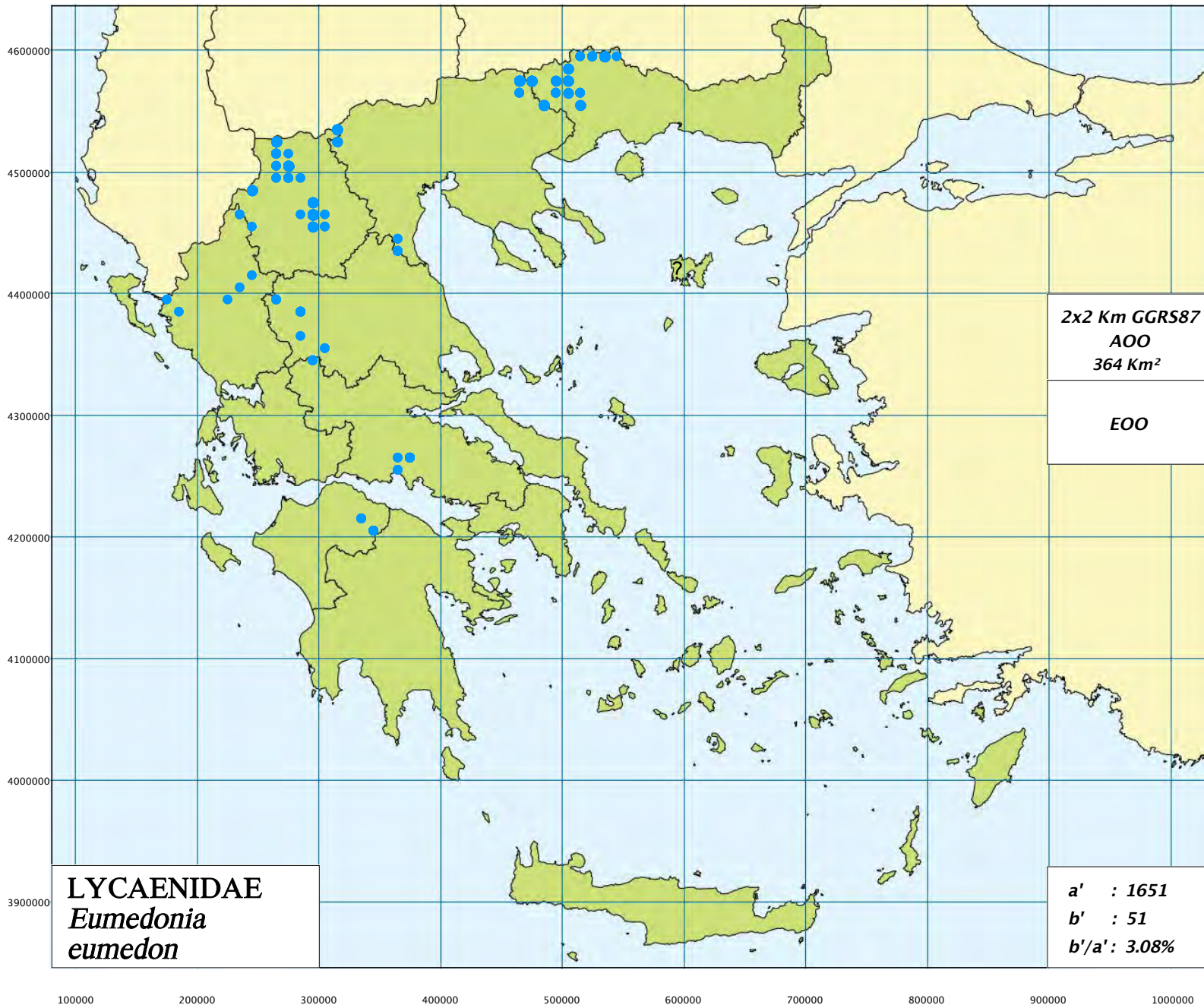
https://www.pamperis.gr/PHOTOGRAPHS/Aricia_agemtis,_Aricia_artaxerxes,_Aricia_anteros.html

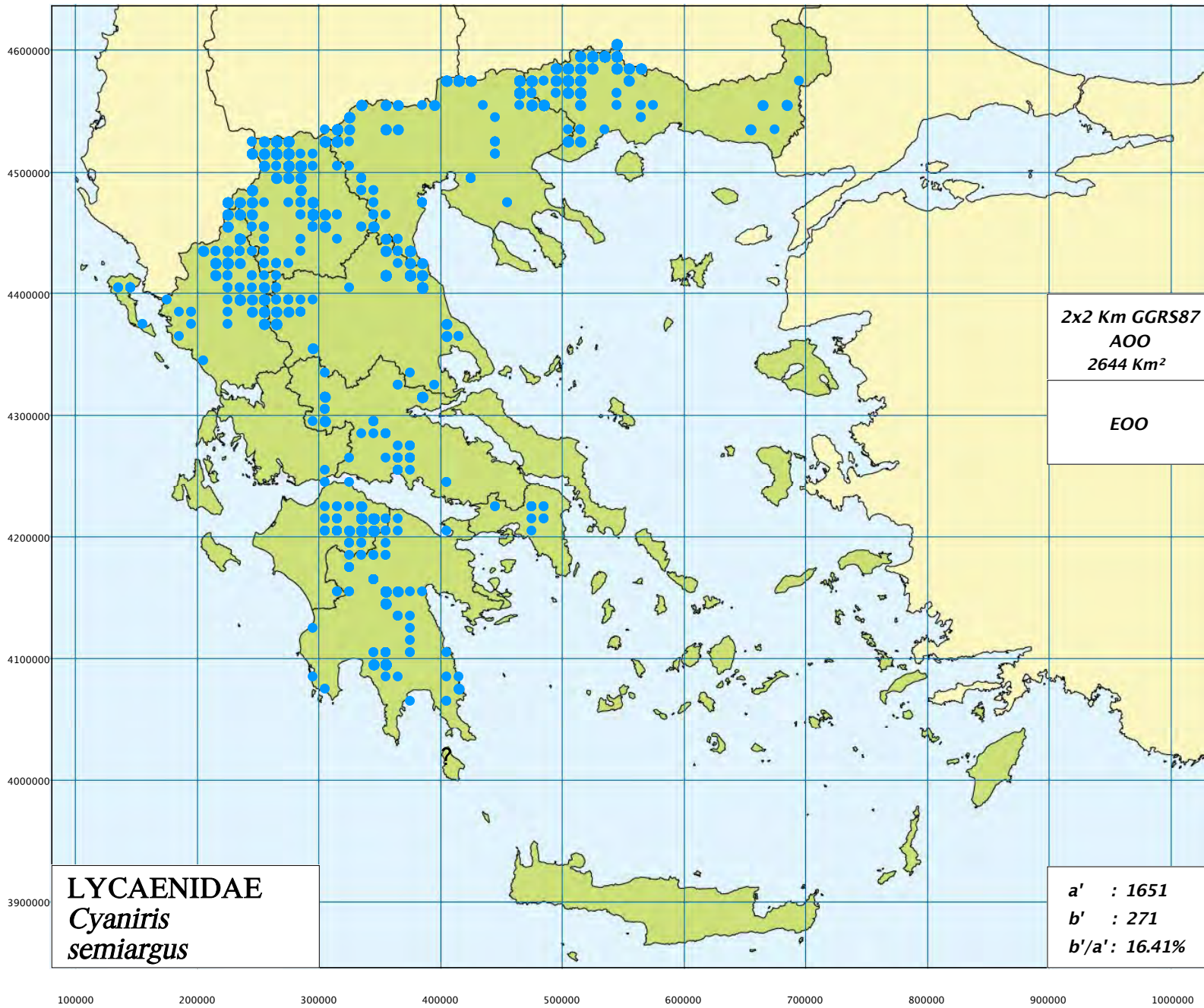


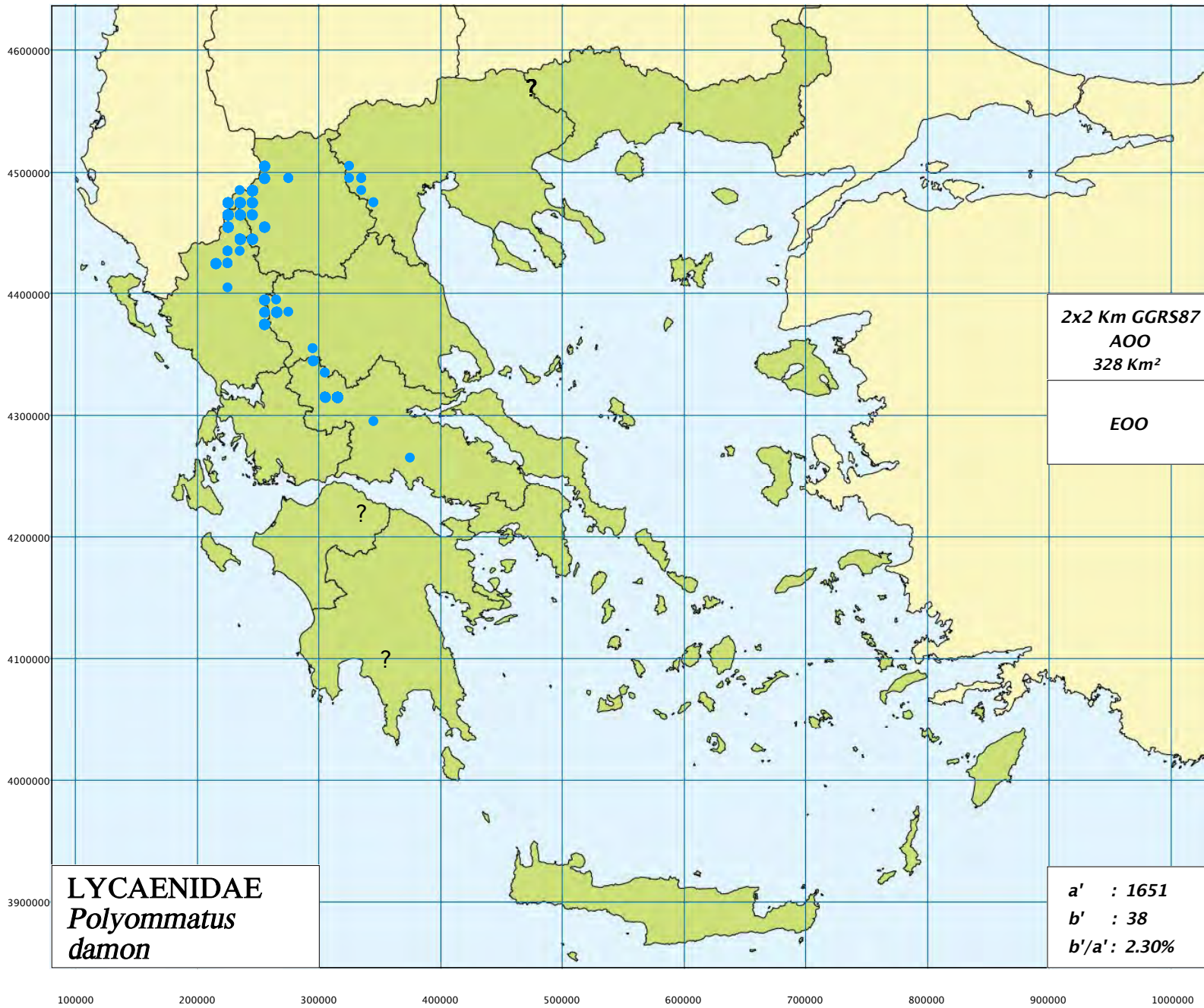
https://www.pamperis.gr/PHOTOGRAPHS/Aricia_agemis,_Aricia_artaxerxes,_Aricia_anteros.html



https://www.pamperis.gr/PHOTOGRAPHS/Aricia_agemtis,_Aricia_artaxerxes,_Aricia_anteros.html





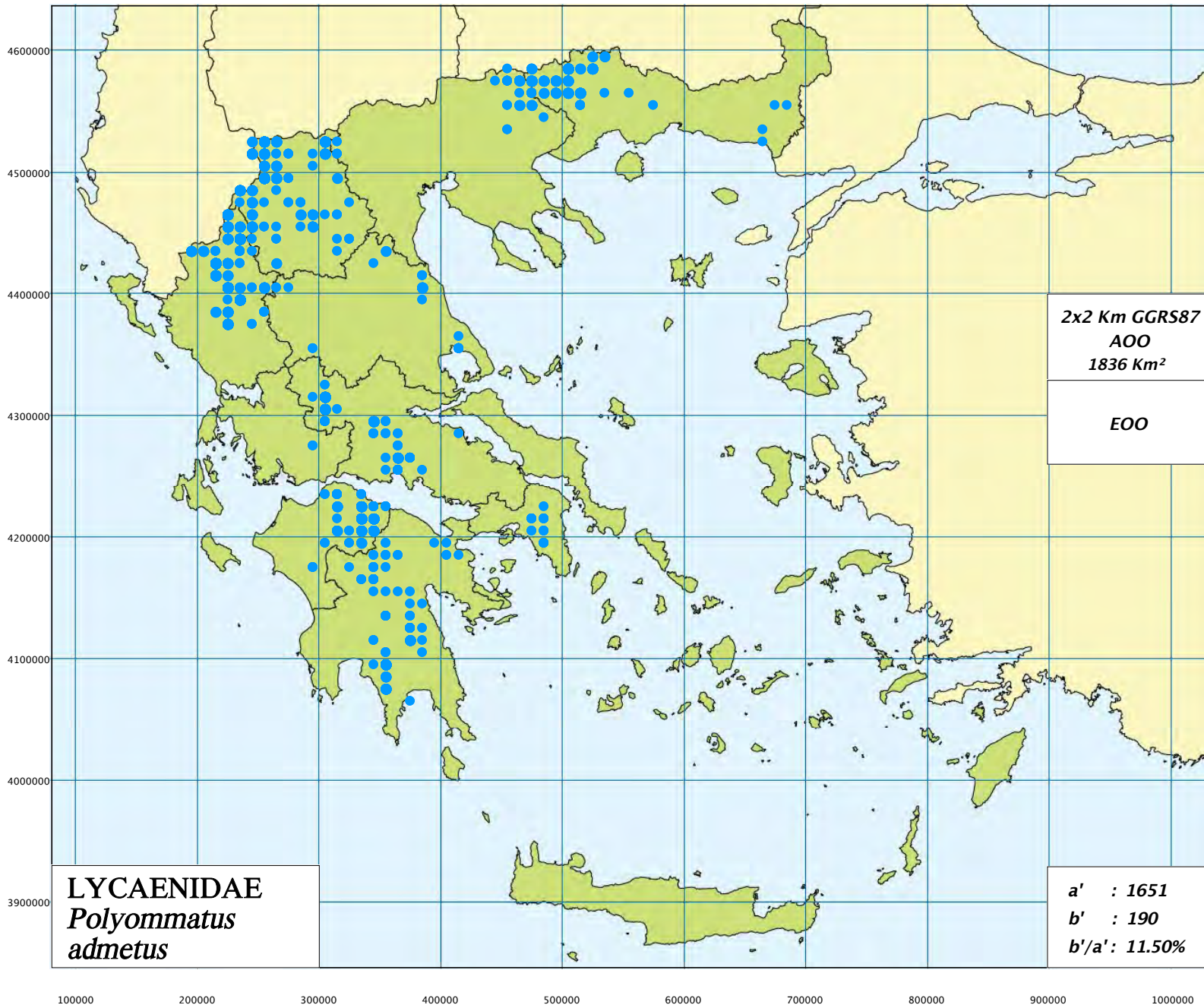


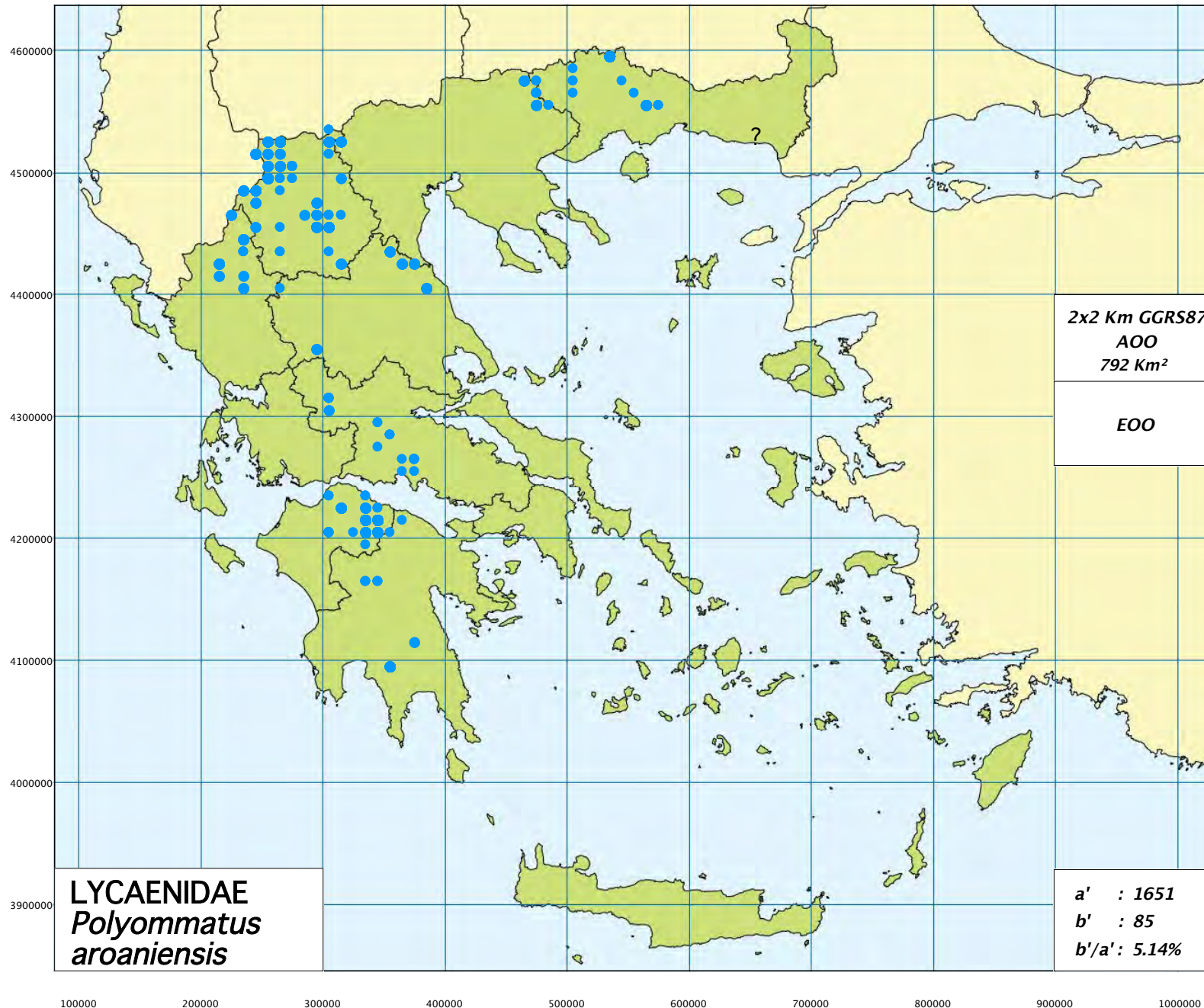


LYCAENIDAE
Polyommatus
iphigenia

2x2 Km GGRS87
AOO
72 Km²
EOO

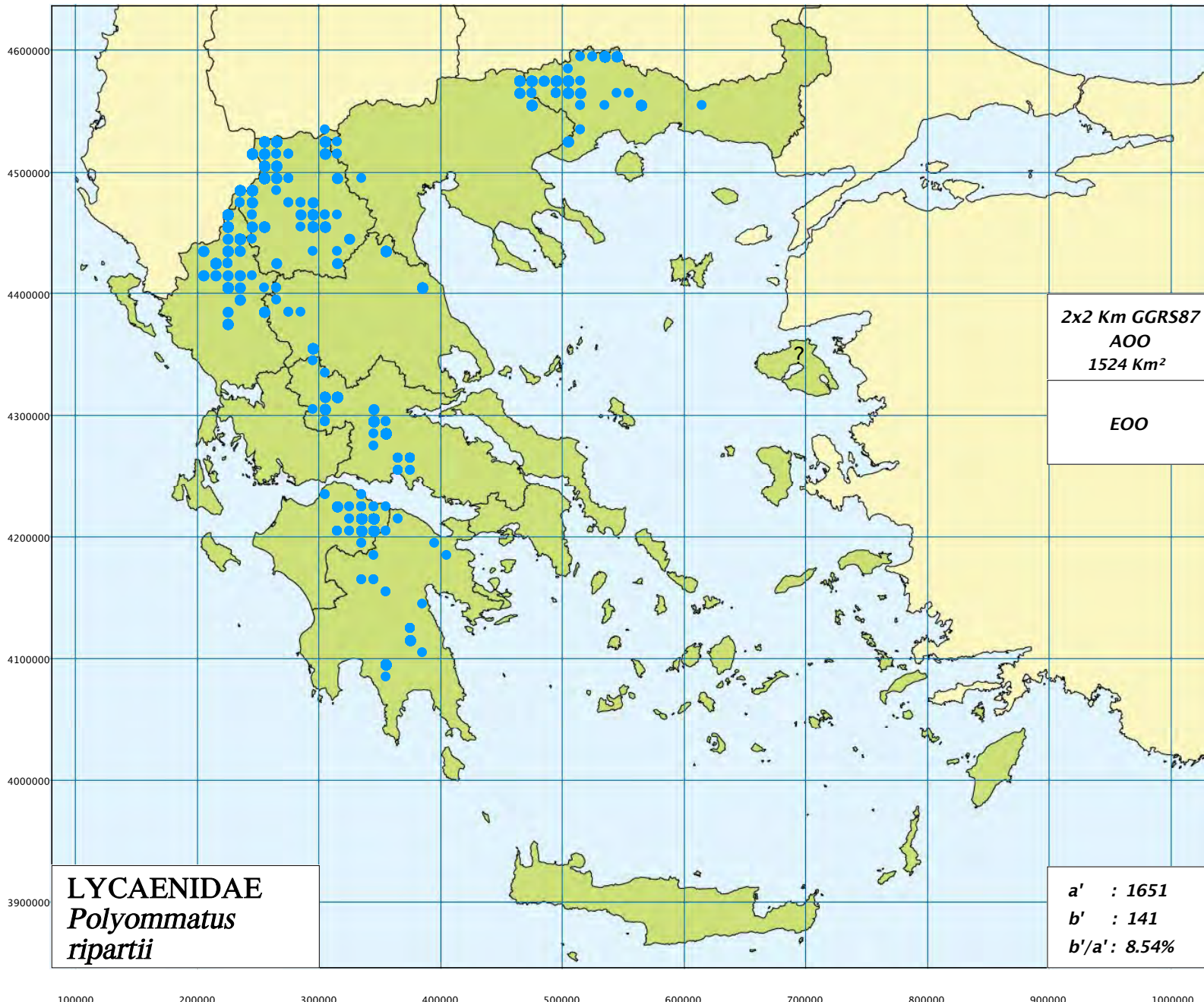
a' : 1651
b' : 4
b'/a' : 0.24%





It was published recently [by Parmentier L, Vila R, Lukhtanov V (2022) Integrative analysis reveals cryptic speciation linked to habitat differentiation within Albanian populations of the anomalous blues (Lepidoptera, Lycaenidae, *Polyommatus* Latreille, 1804). *Comparative Cytogenetics* 16(4): 211-242. <https://doi.org/10.3897/CompCytogen.v16.i4.90558>] that a new cryptic species *Polyommatus lurae* was found in Albania, very similar (in external characters) to *P. orphicus eleniae* and *P. aroaniensis*. All records of *P. aroaniensis*, in this map, should be revised because of the possibility that new cryptic species is hidden.

Δημοσιεύθηκε πρόσφατα [στο Parmentier L, Vila R, Lukhtanov V (2022) Integrative analysis reveals cryptic speciation linked to habitat differentiation within Albanian populations of the anomalous blues (Lepidoptera, Lycaenidae, *Polyommatus* Latreille, 1804). *Comparative Cytogenetics* 16(4): 211-242. <https://doi.org/10.3897/CompCytogen.v16.i4.90558>] ότι ένα νέο είδος το *Polyommatus lurae* βρέθηκε στην Αλβανία, το οποίο είναι πάρα πολύ όμοιο με τα *P. orphicus eleniae* και *P. aroaniensis*. Όλες οι καταγραφές του *P. aroaniensis*, σε αυτόν τον χάρτη πρέπει να επανεξεταστούν επειδή υπάρχει η πιθανότητα να υπάρχουν κρυπτικά είδη.

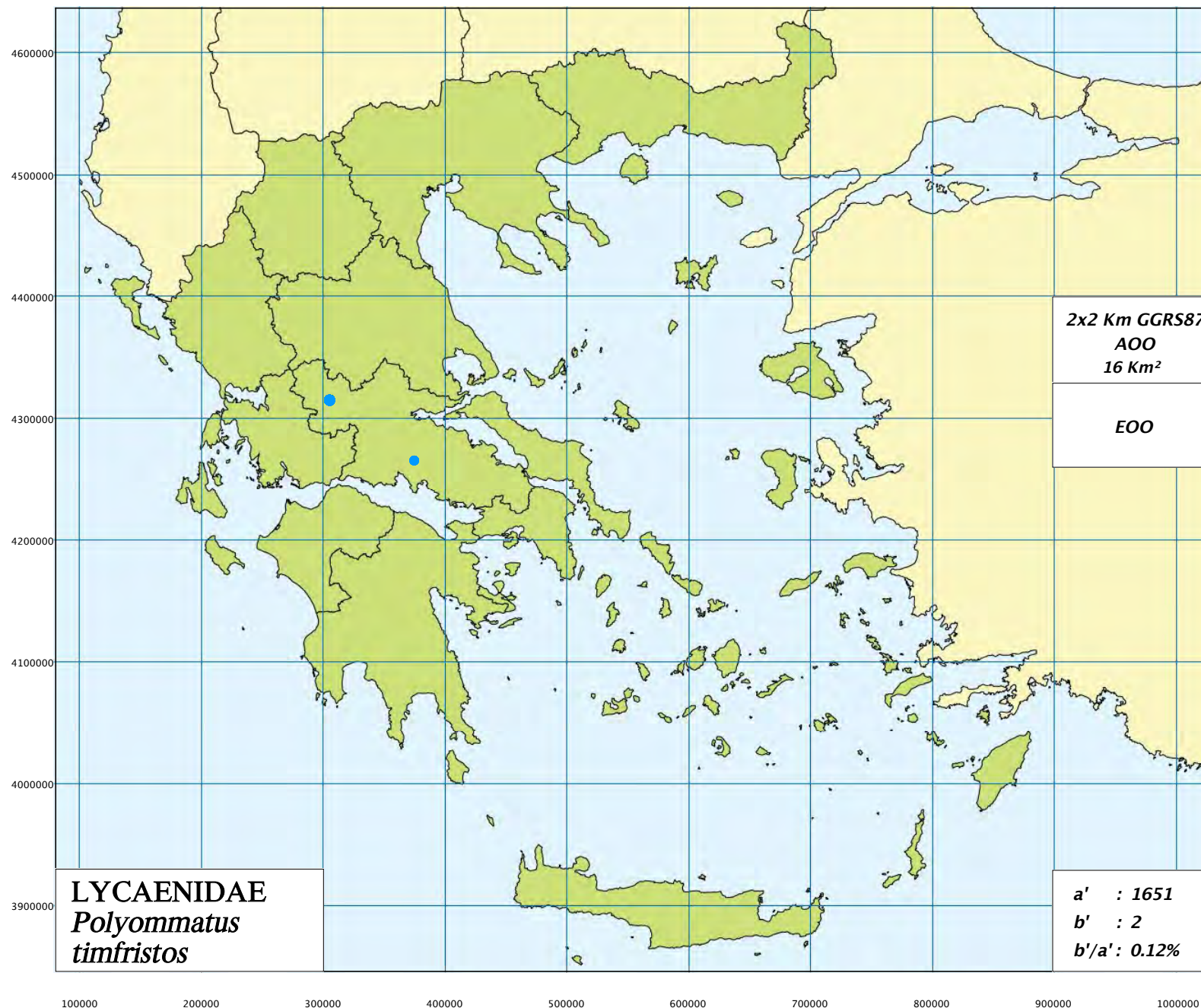


LYCAENIDAE
*Polyommatus
ripartii*

As published by VISHNEVSKAYA MS, SAIFITDINOVA AF, LUKHTANOV VA (2016):
Karyosystematics and molecular taxonomy of the anomalous blue butterflies (Lepidoptera, Lycaenidae) from the Balkan Peninsula. Comparative Cytogenetics 10(5): 1-85. <https://doi.org/10.3897/CompCytogen.v10i5.10944>, the new endemic species *Polyommatus timfristos* was found in Mt Parassos and Mt Tymfristos, very similar (in external characters) to *P. ripartii*. All records of *P. ripartii*, in this map, should be revised because of the possibility that new cryptic species is hidden.

Όπως δημοσιεύθηκε στο VISHNEVSKAYA MS, SAIFITDINOVA AF, LUKHTANOV VA (2016):
Karyosystematics and molecular taxonomy of the anomalous blue butterflies (Lepidoptera, Lycaenidae) from the Balkan Peninsula. Comparative Cytogenetics 10(5): 1-85. <https://doi.org/10.3897/CompCytogen.v10i5.10944>, το νέο είδος *Polyommatus timfristos* βρέθηκε στα βουνά Παρνασσός και Τυμφρηστός, το οποίο είναι πάρα πολύ όμοιο με το *P. ripartii* (στα εξωτερικά χαρακτηριστικά). Όλες οι καταγραφές του *P. ripartii*, σε αυτόν τον χάρτη, θα πρέπει να επανεξεταστούν επειδή υπάρχει η πιθανότητα να υπάρχουν και άλλα κρυπτικά είδη.

ΕΝΔΗΜΙΚΟ ΕΙΔΟΣ ΤΗΣ ΕΛΛΑΔΑΣ
ENDEMIC SPECIES OF GREECE





Polyommatus orphicus eleniae, a new subspecies as suggested by VISHNEVSKAYA MS, SAIFITDINOVA AF, LUKHTANOV VA (2016): Karyosystematics and molecular taxonomy of the anomalous blue butterflies (Lepidoptera, Lycaenidae) from the Balkan Peninsula. Comparative Cytogenetics 10(5): 1–85. <https://doi.org/10.3897/CompCytogen.v10i5.10944>. Very similar to *P. aroaniensis*; see photos of *P. eleniae* in pages 296–297 of the book the Butterflies of Greece (2009).

Polyommatus orphicus eleniae, το οποίο έχει προταθεί με το VISHNEVSKAYA MS, SAIFITDINOVA AF, LUKHTANOV VA (2016): Karyosystematics and molecular taxonomy of the anomalous blue butterflies (Lepidoptera, Lycaenidae) from the Balkan Peninsula. Comparative Cytogenetics 10(5): 1–85. <https://doi.org/10.3897/CompCytogen.v10i5.10944>. Μεγάλη ομοιότητα με το *P. aroaniensis*. Δείτε για φωτογραφίες του *P. eleniae*, στις σελίδες 296–297 του βιβλίου Οι Πεταλούδες της Ελλάδας (2009).



LYCAENIDAE
Polyommatus
orphicus eleniae

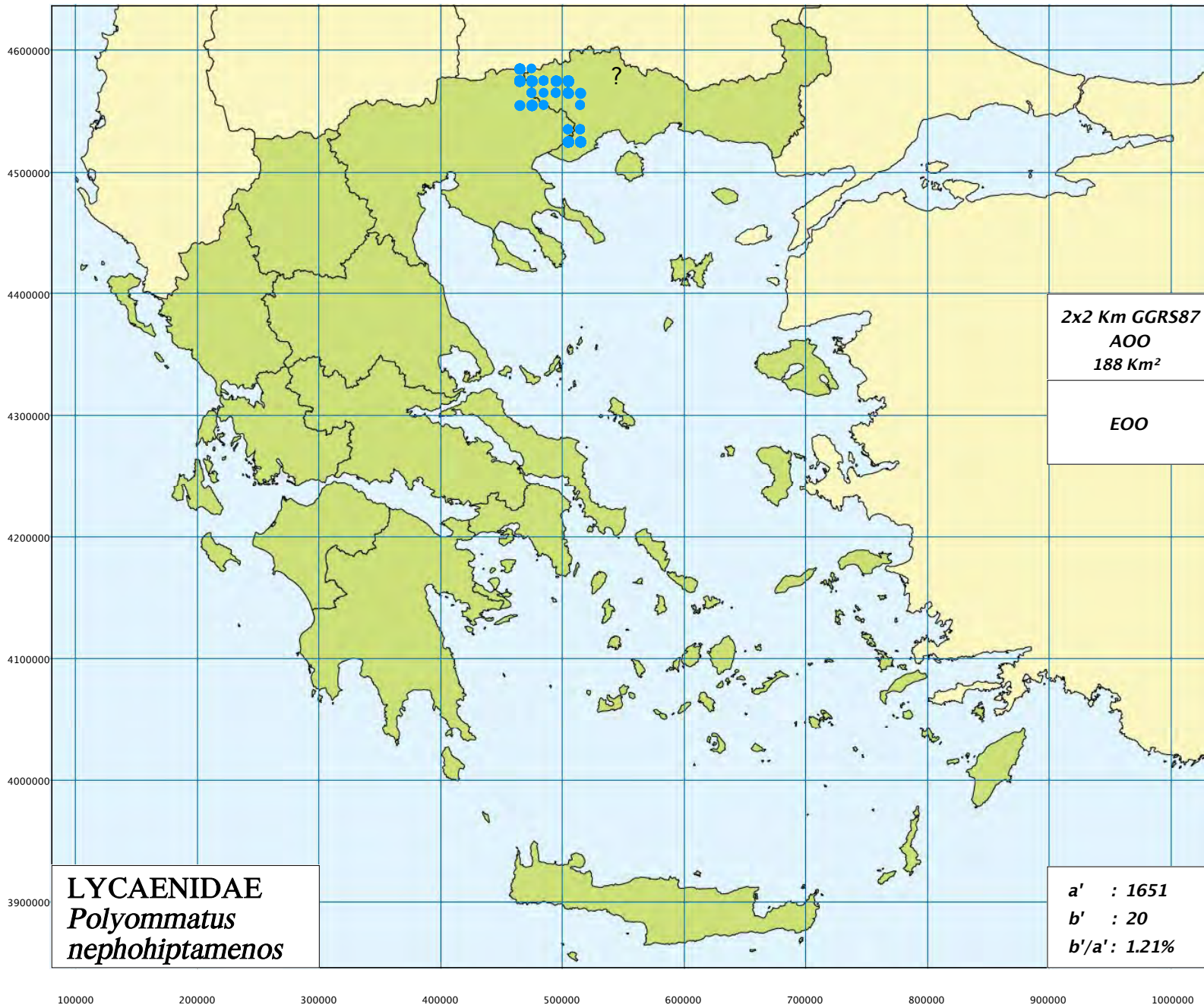
2x2 Km GGRS87
AOO
160 Km²

EOO

a' : 1651
b' : 11
b'/a' : 0.66%

Polyommatus orphicus eleniae, a new subspecies as suggested by VISHNEVSKAYA MS, SAIFITDINOVA AF, LUKHTANOV VA (2016): Karyosystematics and molecular taxonomy of the anomalous blue butterflies (Lepidoptera, Lycaenidae) from the Balkan Peninsula. Comparative Cytogenetics 10(5): 1-85. <https://doi.org/10.3897/CompCytogen.v10i5.10944>. Very similar to *P. aroaniensis*; see photos of *P. eleniae* in pages 296-297 of the book the Butterflies of Greece (2009).

Polyommatus orphicus eleniae, το οποίο έχει προταθεί με το VISHNEVSKAYA MS, SAIFITDINOVA AF, LUKHTANOV VA (2016): Karyosystematics and molecular taxonomy of the anomalous blue butterflies (Lepidoptera, Lycaenidae) from the Balkan Peninsula. Comparative Cytogenetics 10(5): 1-85. <https://doi.org/10.3897/CompCytogen.v10i5.10944>. Μεγάλη ομοιότητα με το *P. aroaniensis*. Δείτε για φωτογραφίες του *P. eleniae*, στις σελίδες 296-297 του βιβλίου Οι Πεταλούδες της Ελλάδας (2009).



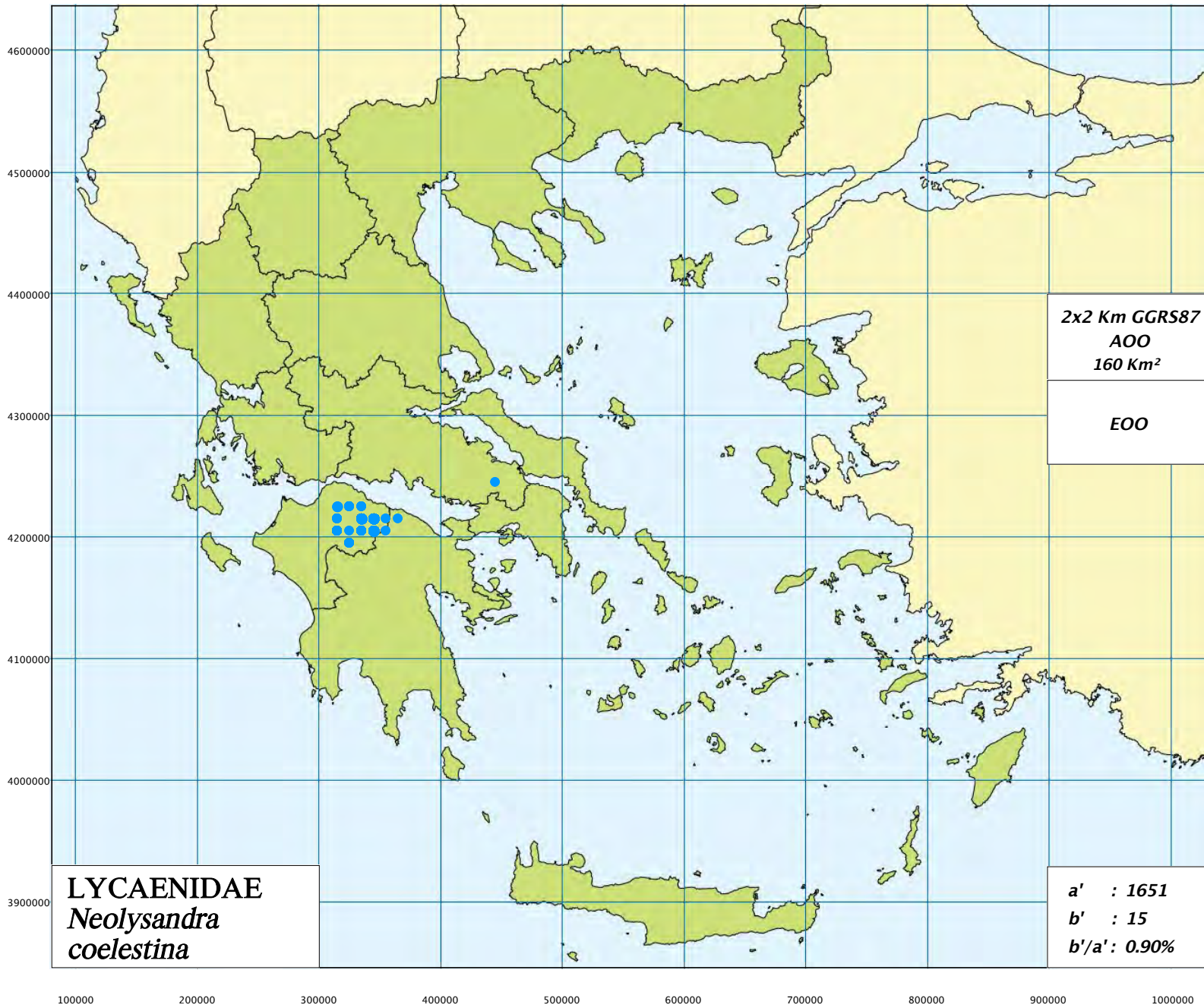
LYCAENIDAE
Polyommatus
nephohiptamenos

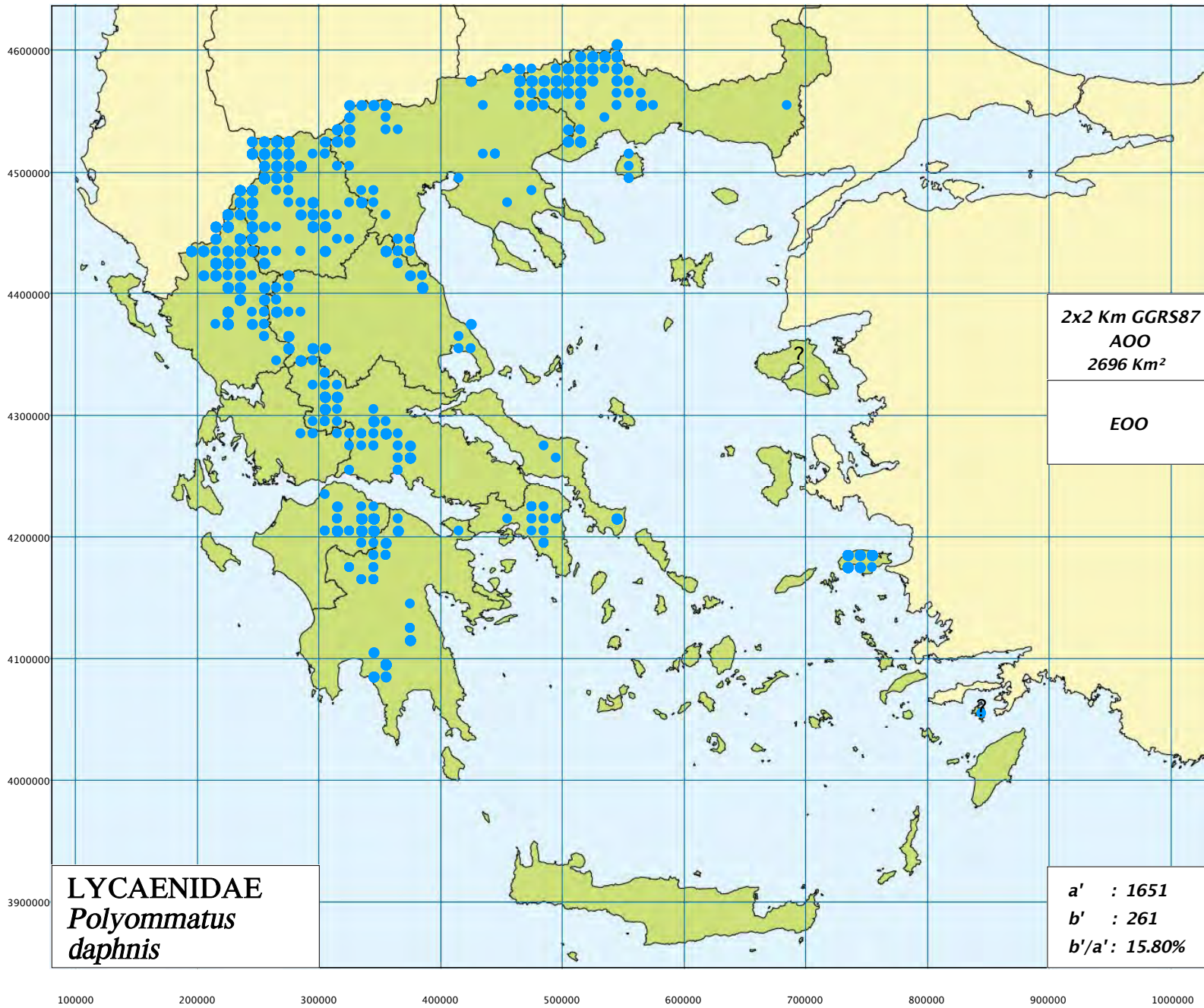
a' : 1651
b' : 20
b'/a' : 1.21%

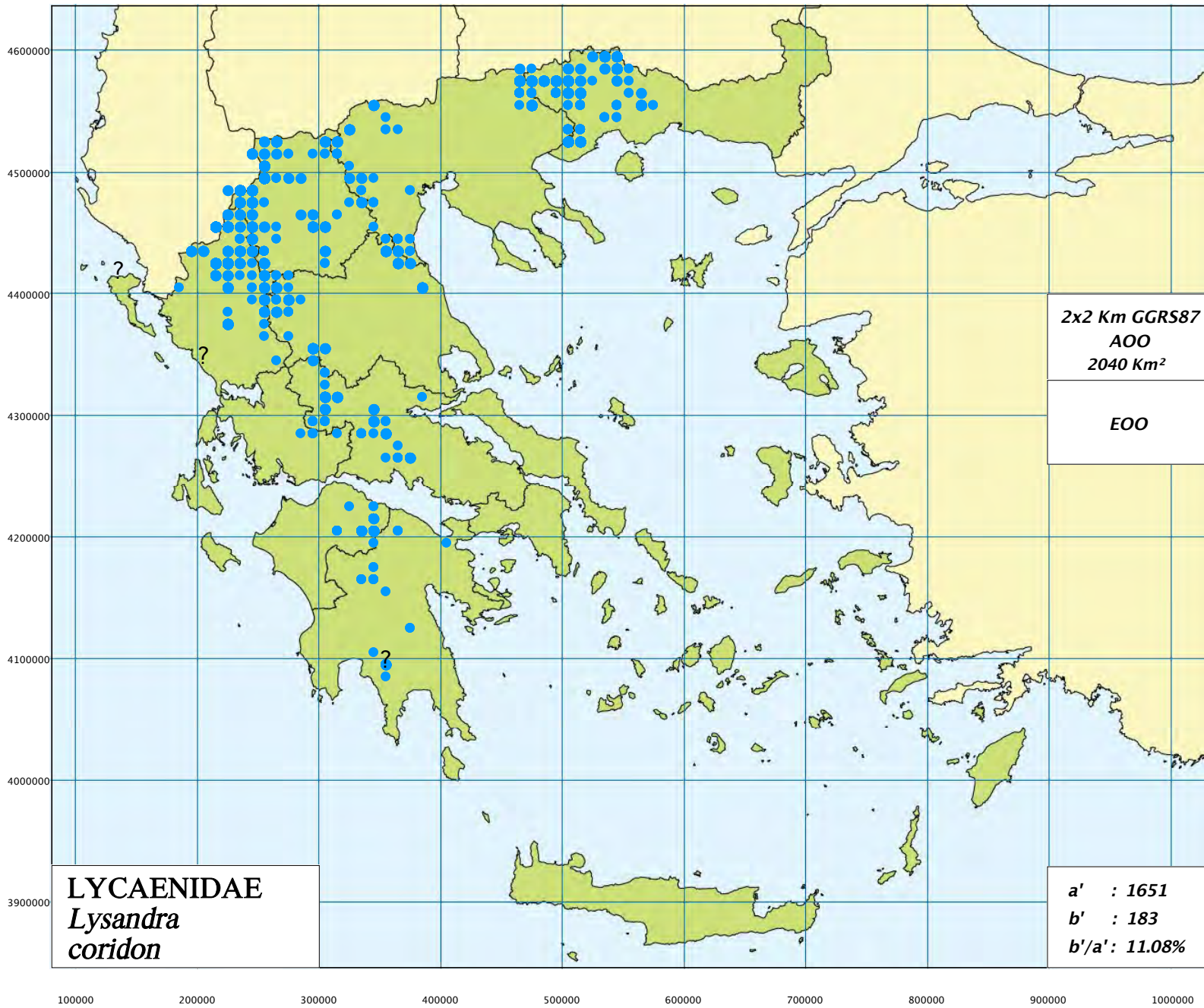
2x2 Km GGRS87
AOO
188 Km²

EOO

100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000



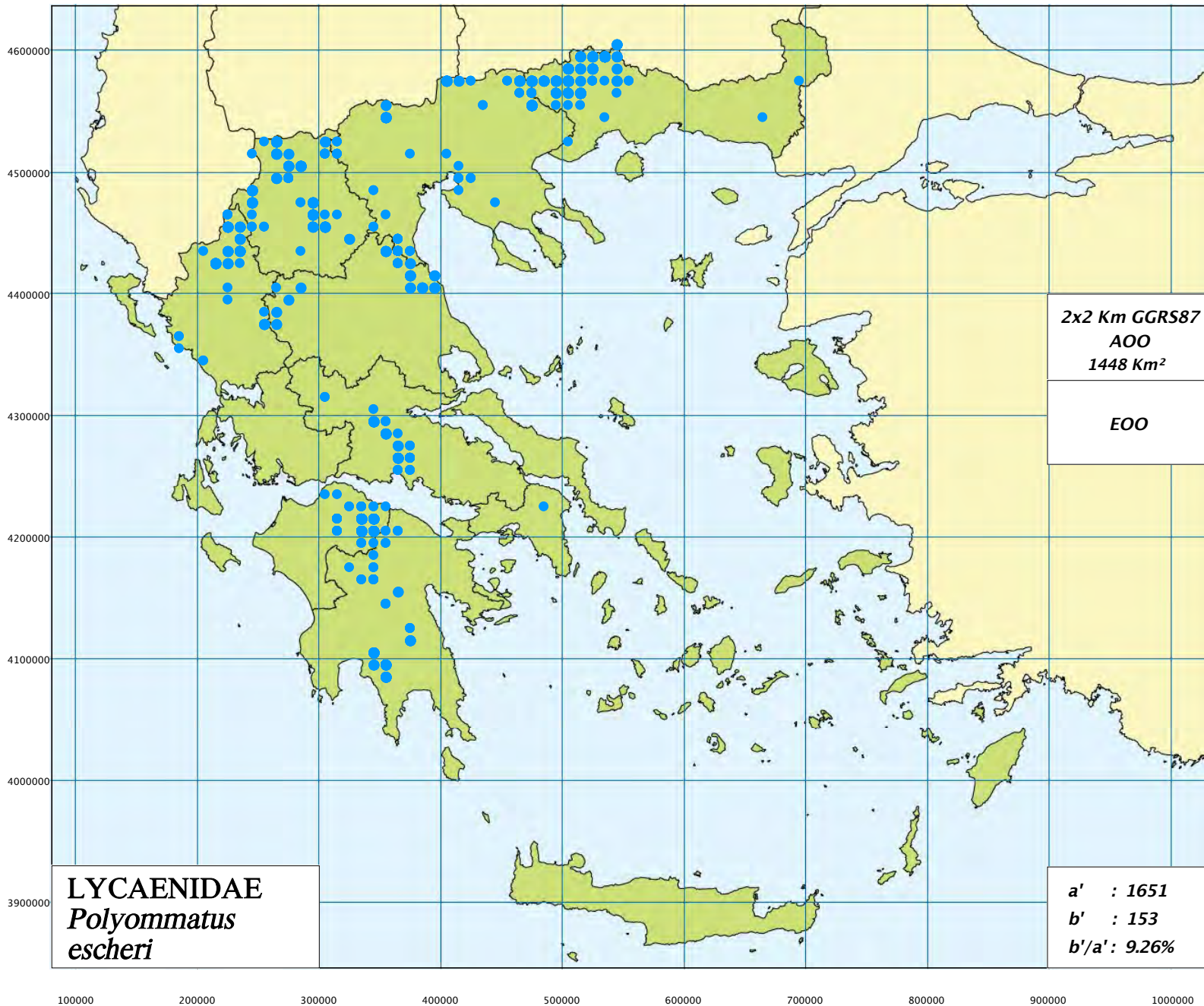




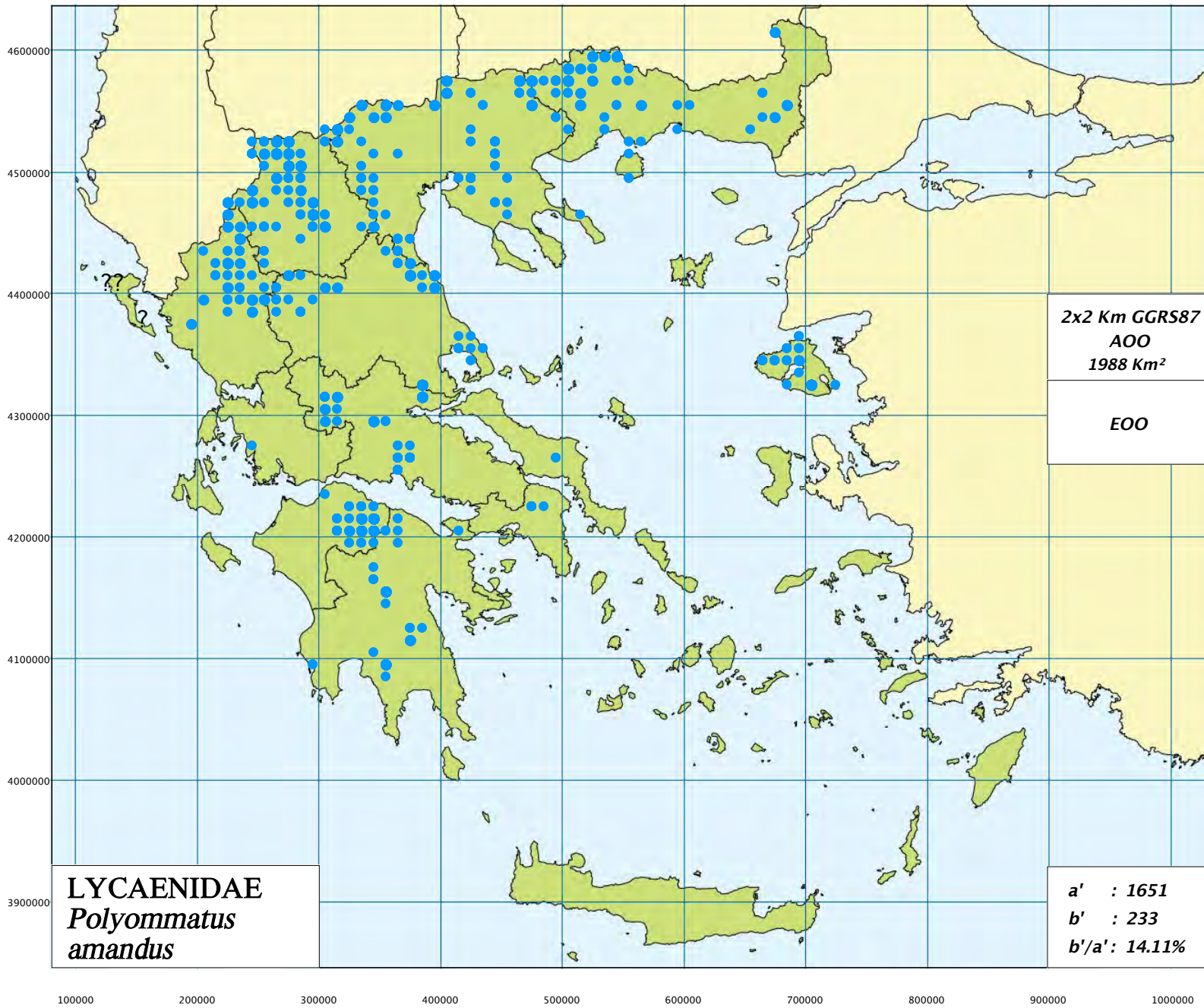


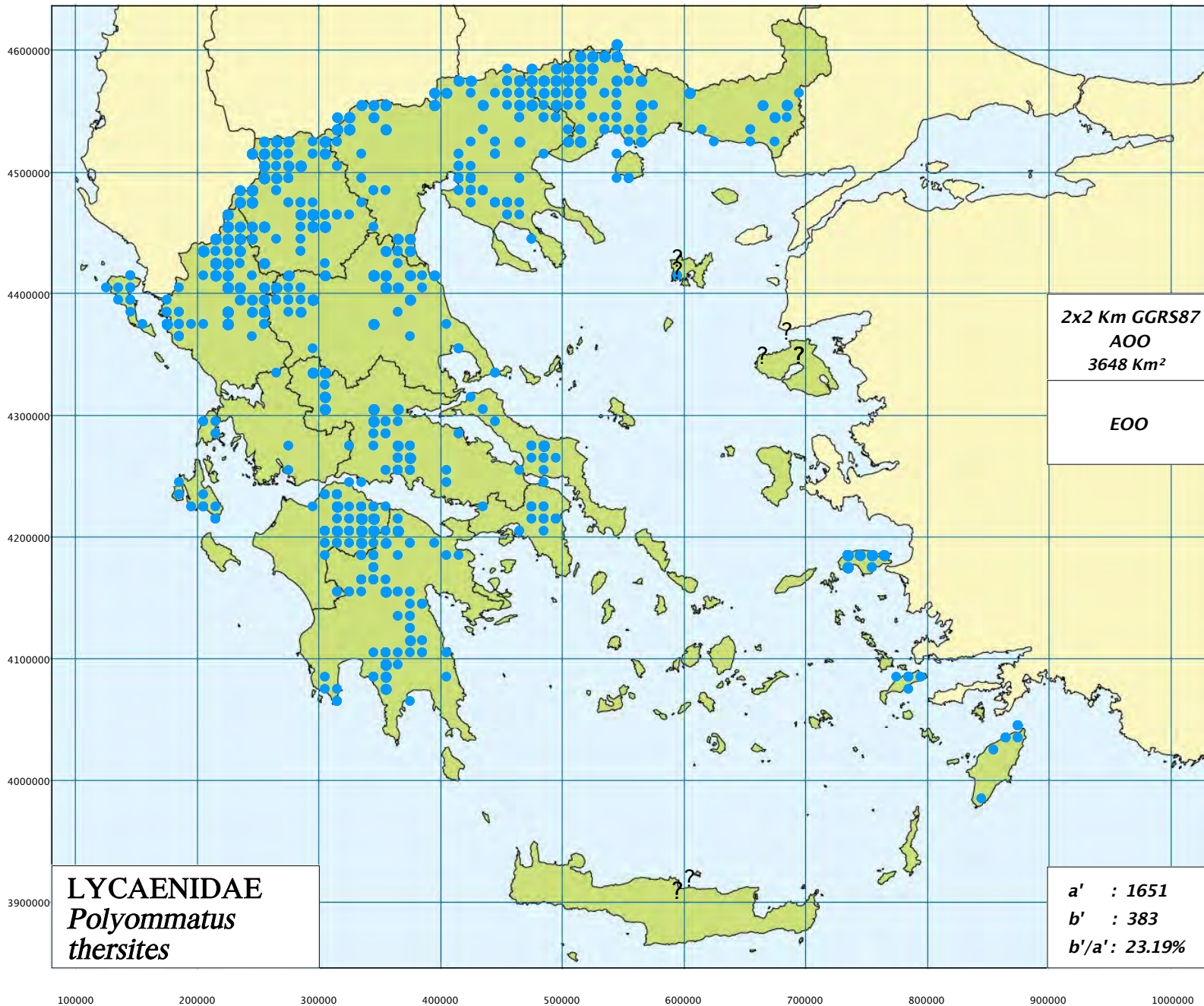
100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000

https://www.pamperis.gr/PHOTOGRAPHS/Lysandra_coridon,_Lysandra_bellargus.html

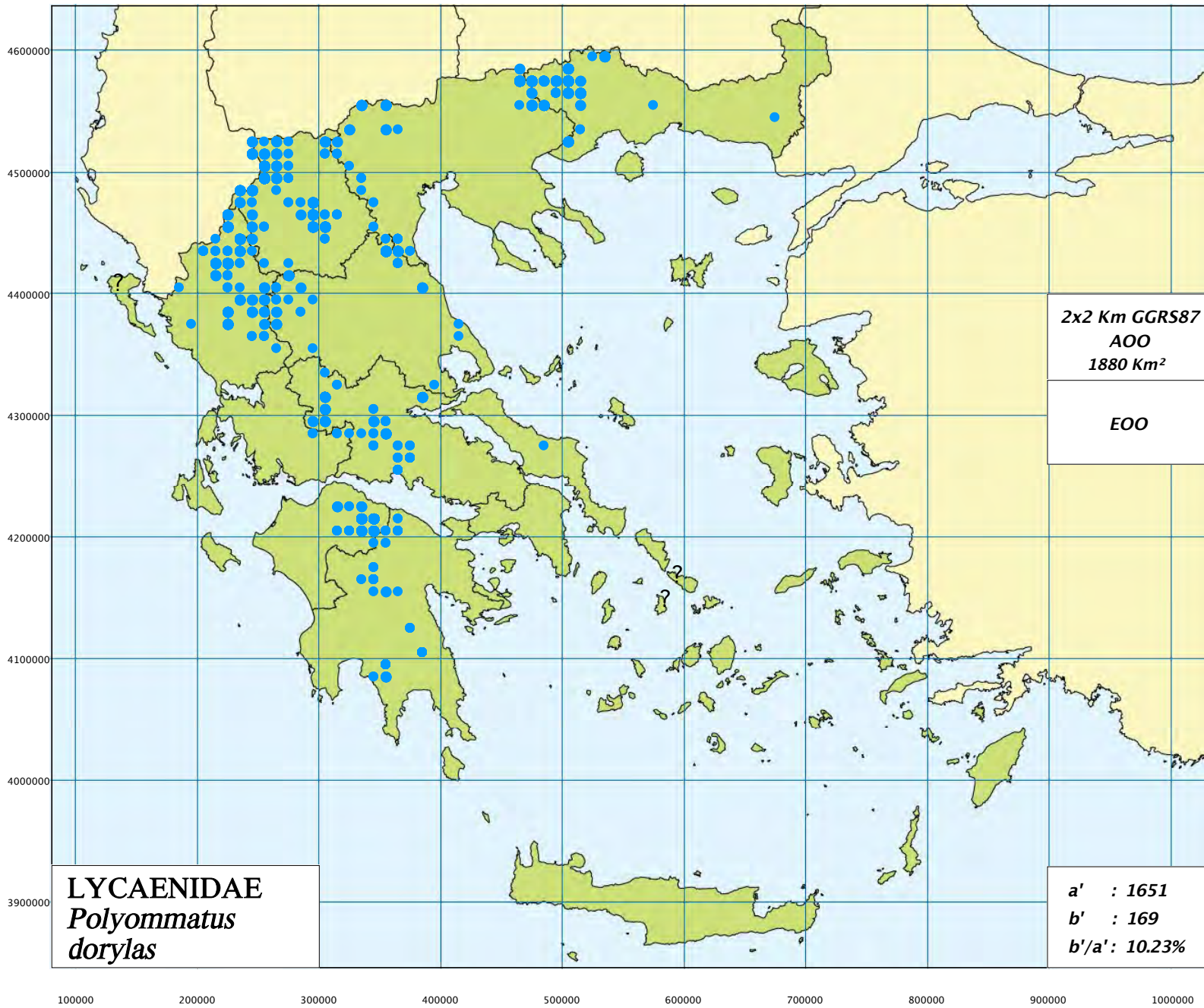


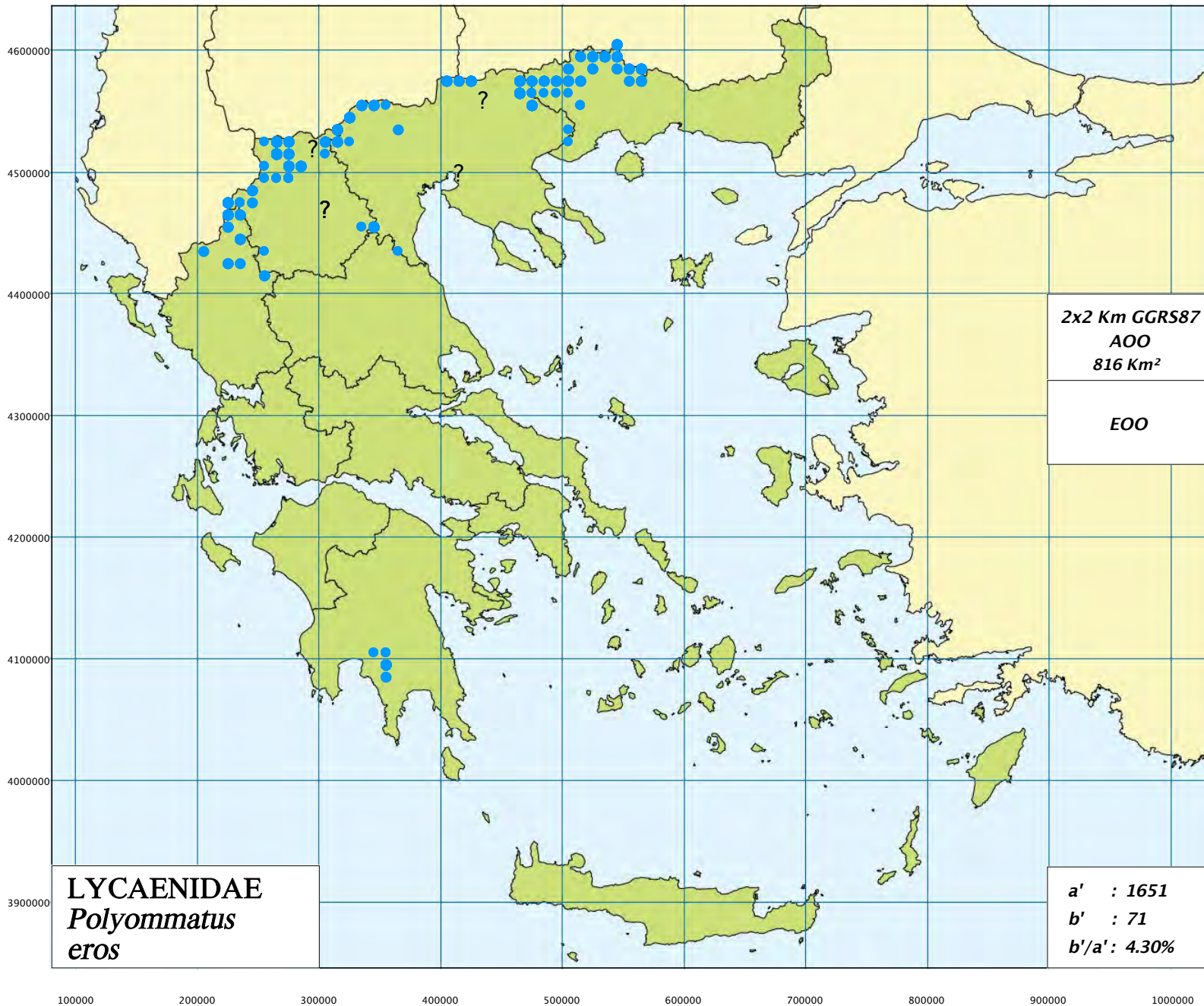
https://www.pamperis.gr/PHOTOGRAPHS/Polyommatus_escheri,_Polyommatus_thersites.html



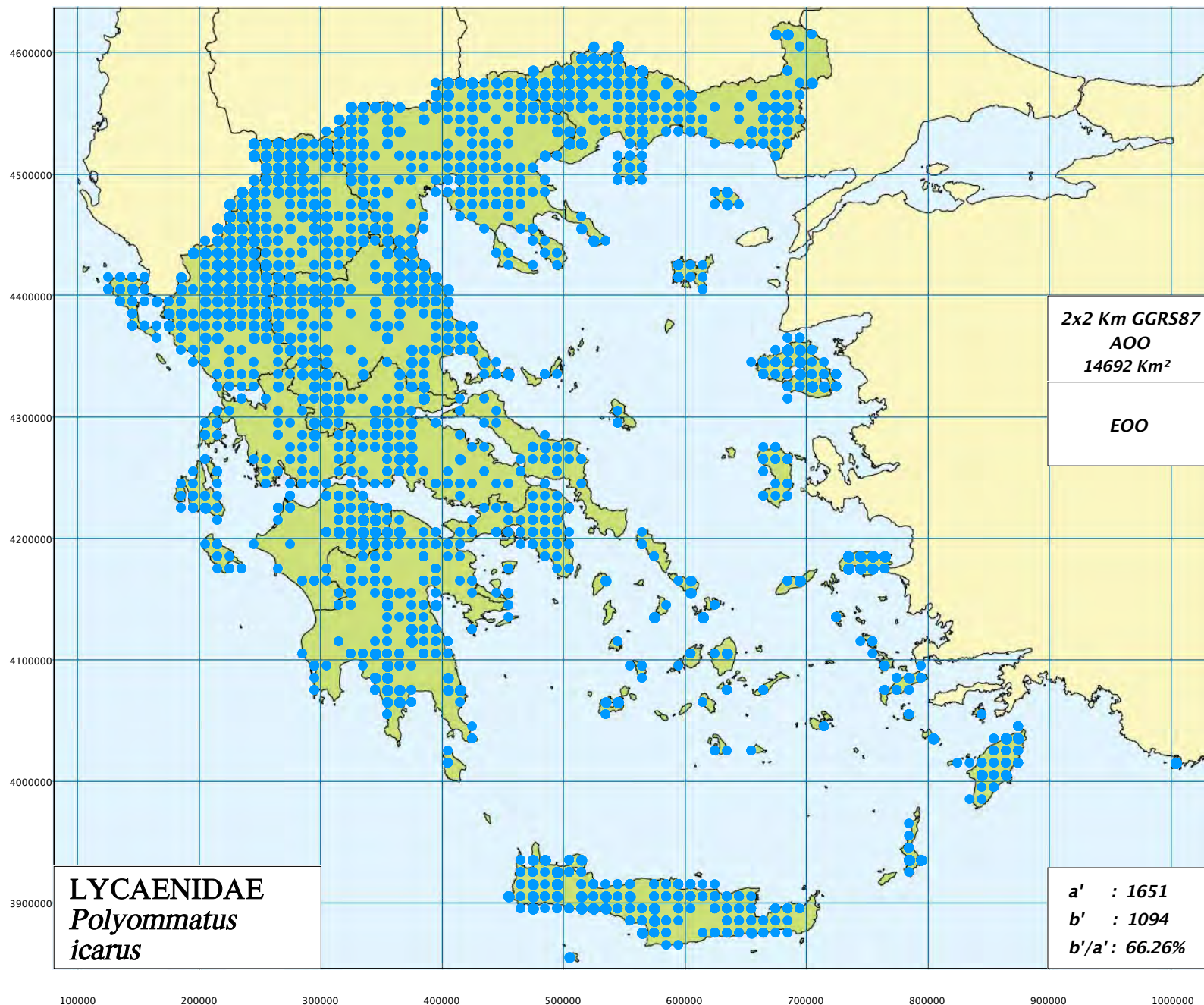


https://www.pamperis.gr/PHOTOGRAPHS/Polyommatus_escheri,_Polyommatus_thersites.html



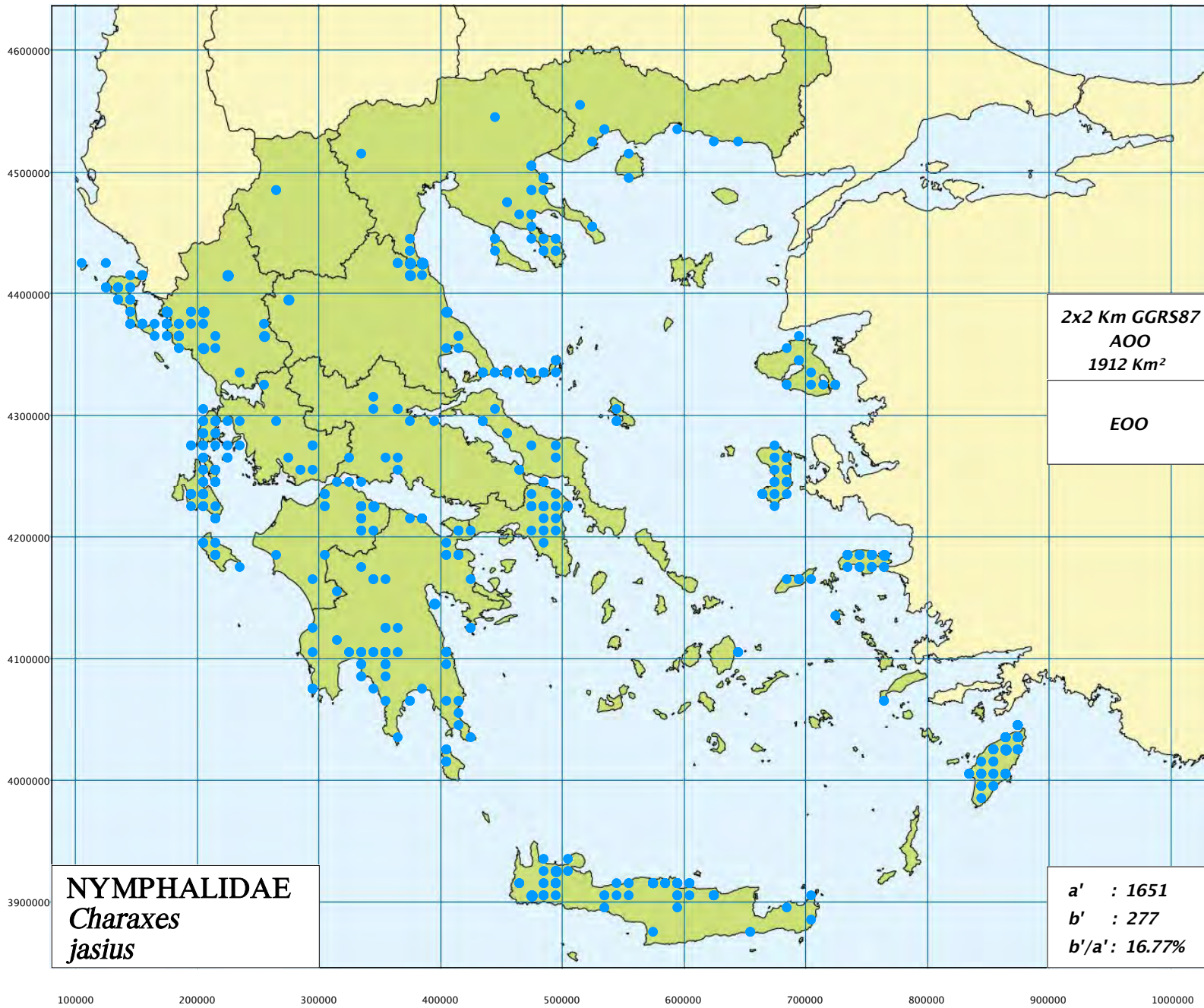


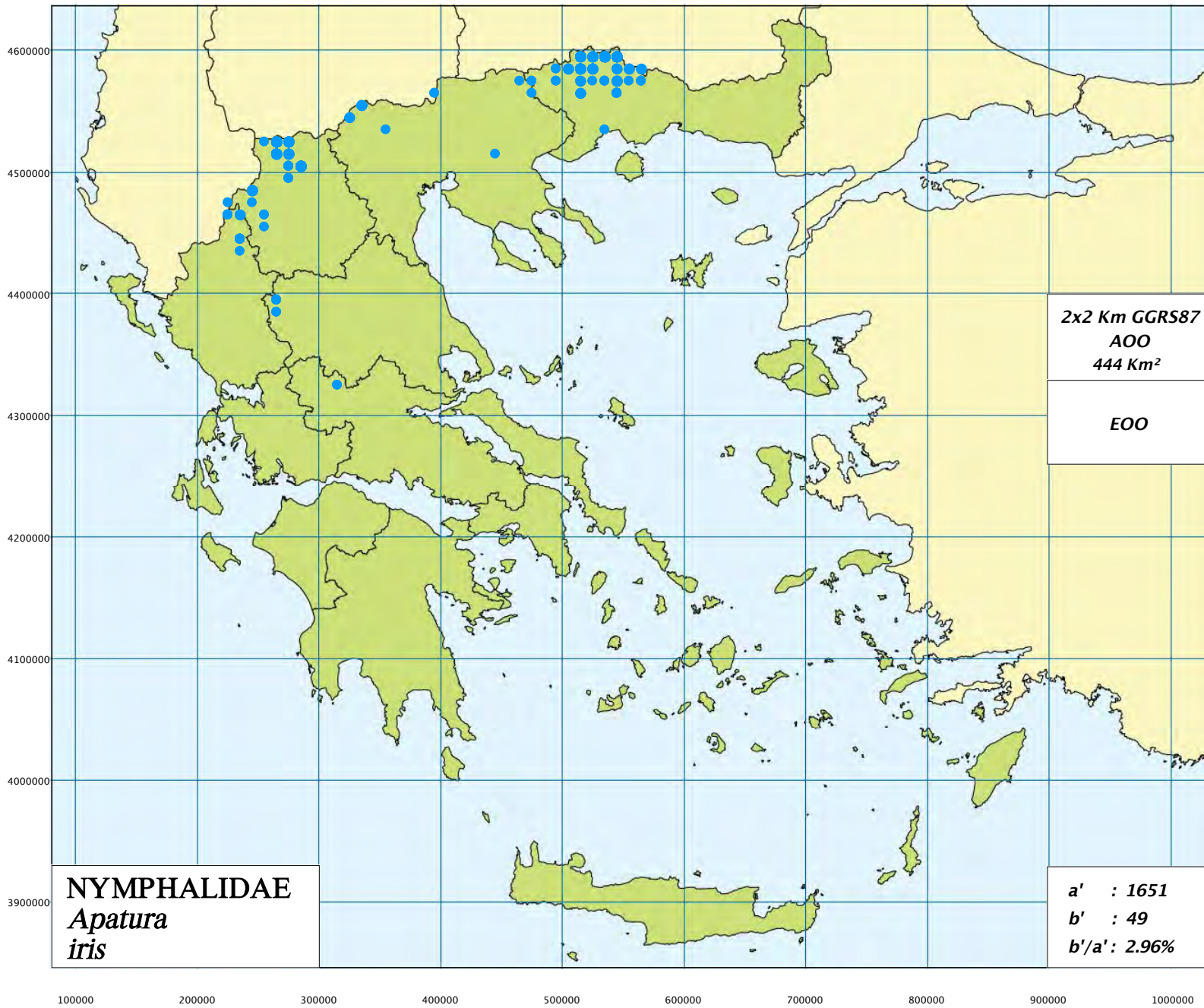
https://www.pamperis.gr/PHOTOGRAPHS/Polyommatus_icarus,_Polyommatus_eros.html

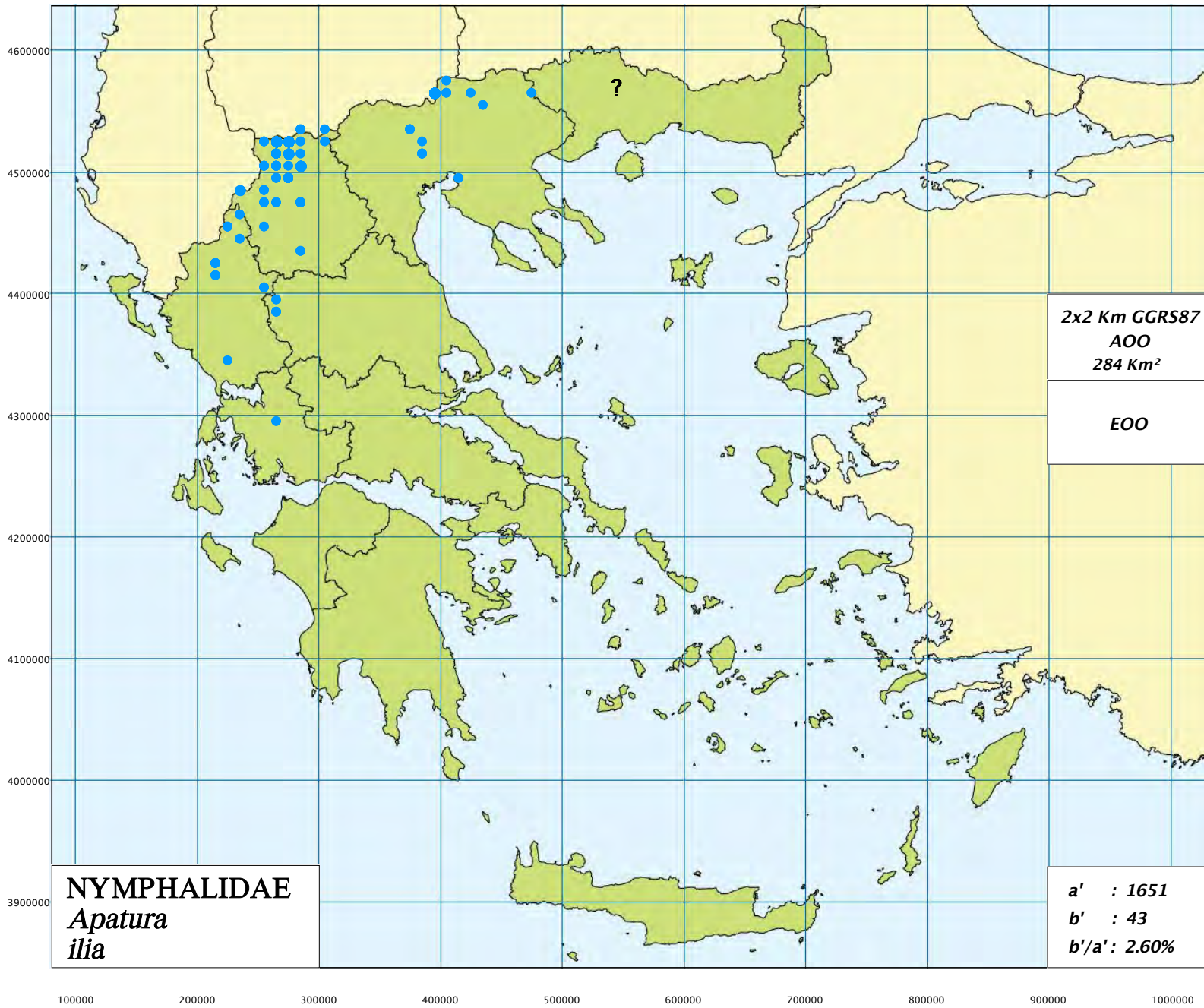


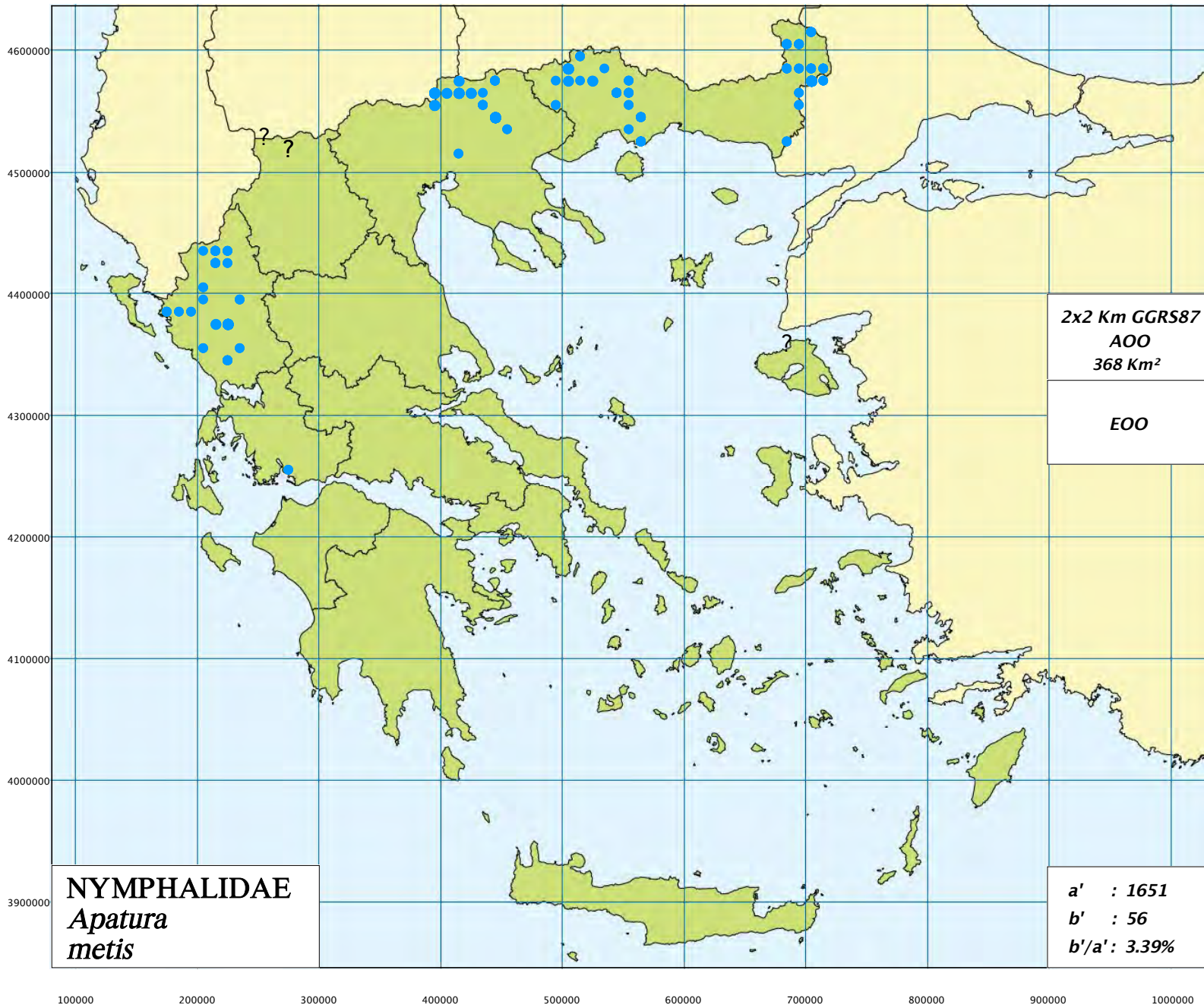
All records of *Polyommatus andronicus* (in previous Maps) are included here in the Map for *Polyommatus icarus*.

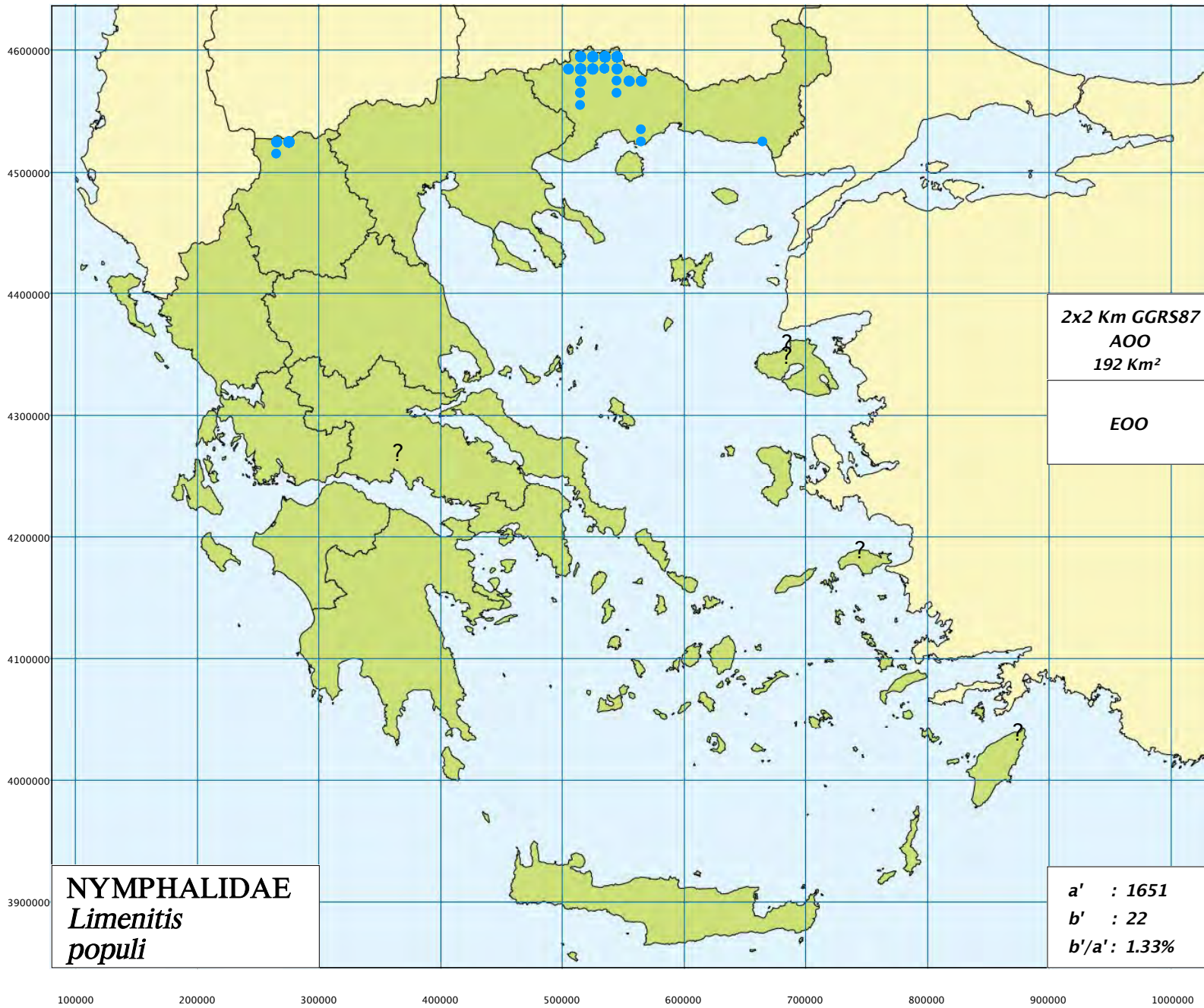
Όλες οι καταγραφές για το *Polyommatus andronicus* των προηγούμενων Χαρτών έχουν συμπεριληφθεί εδώ στον Χάρτη για το *Polyommatus icarus*

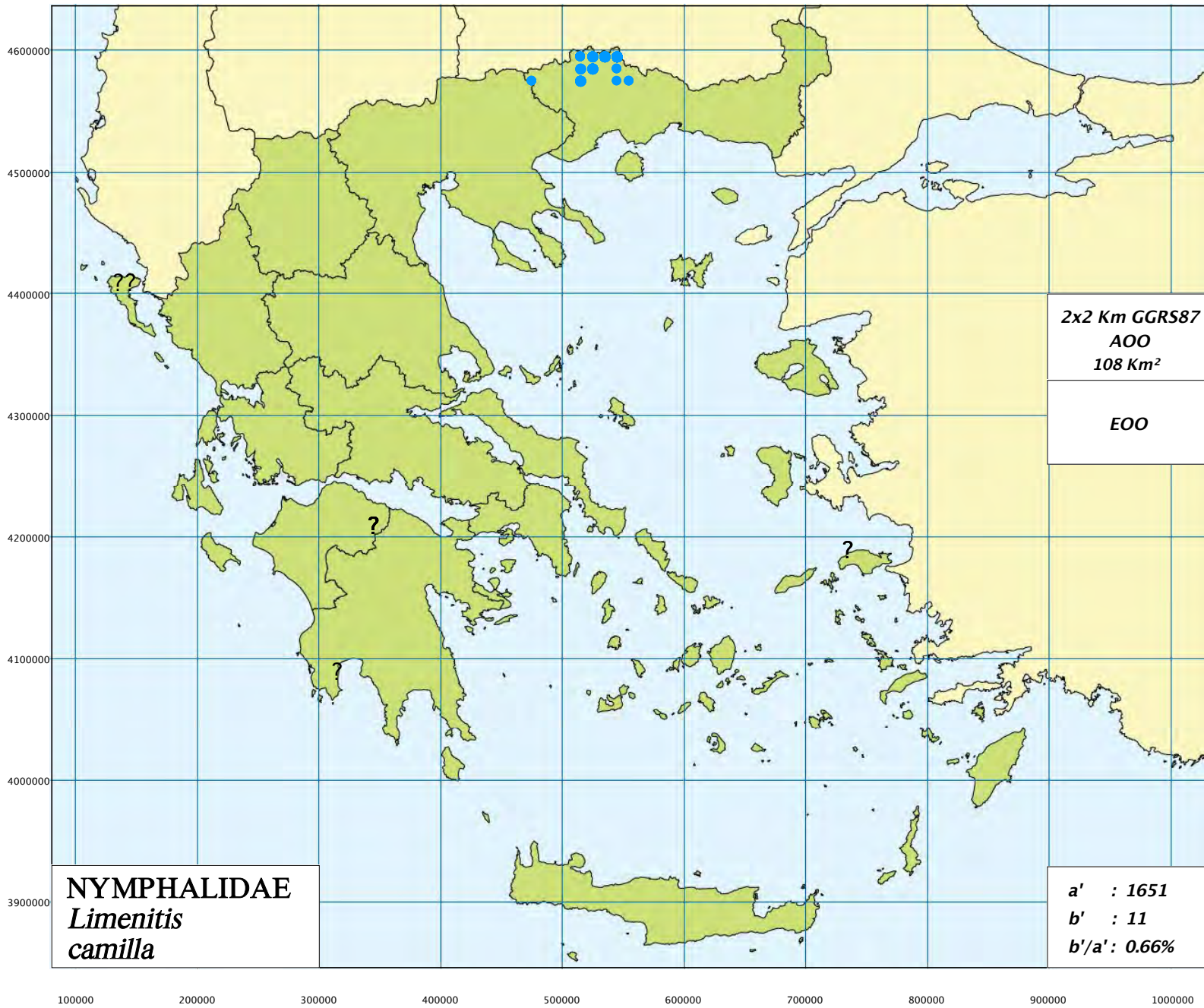


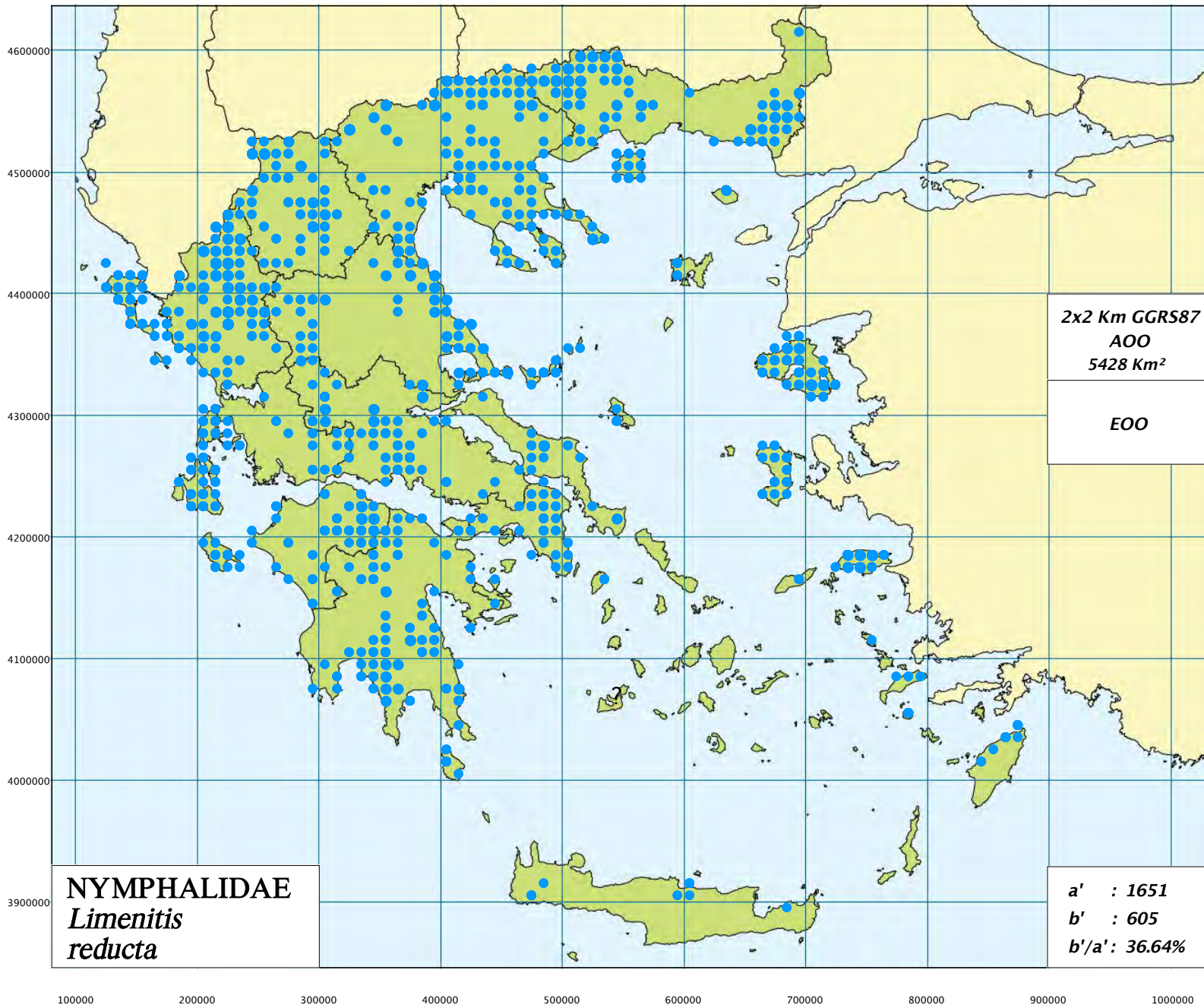


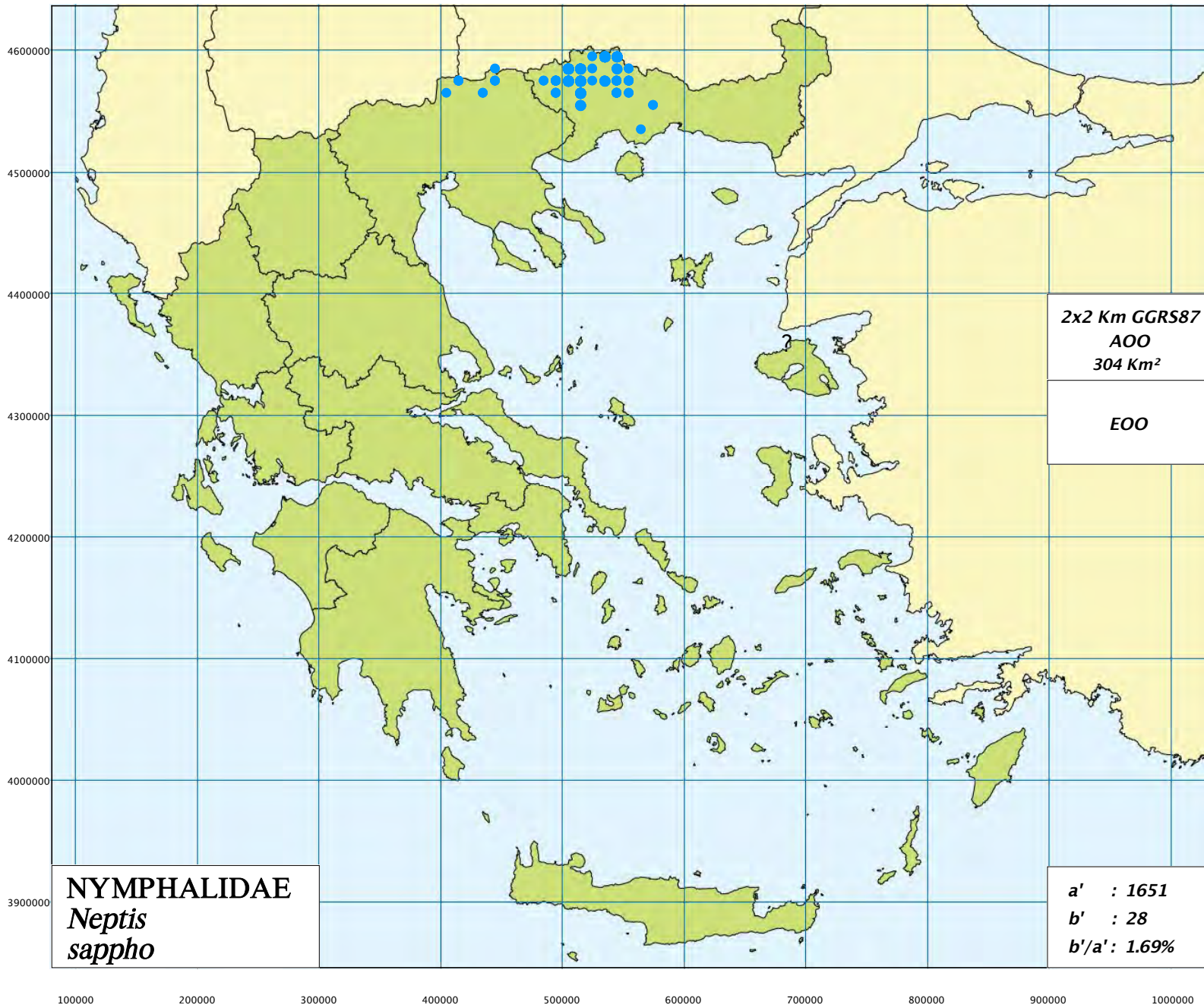


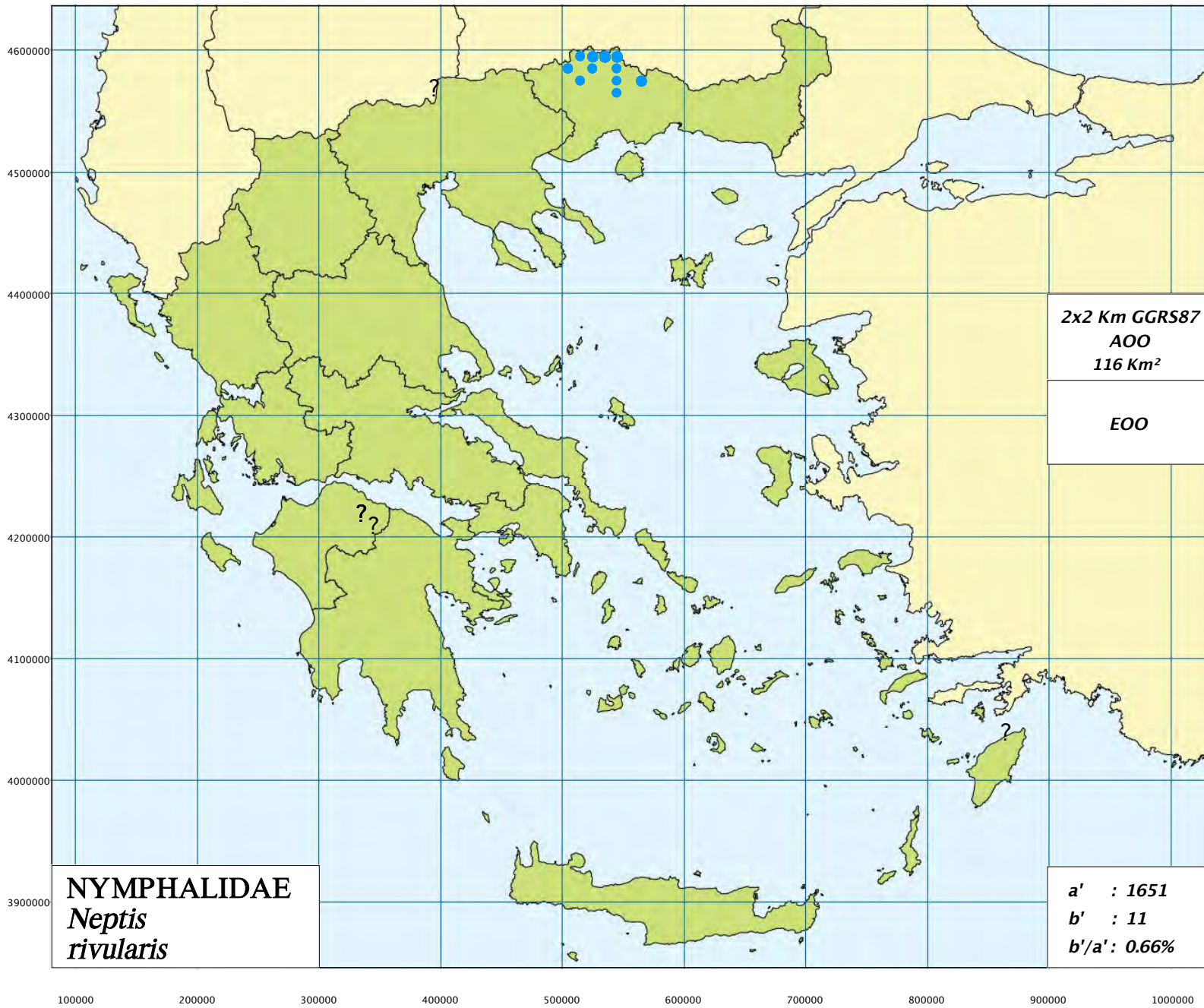


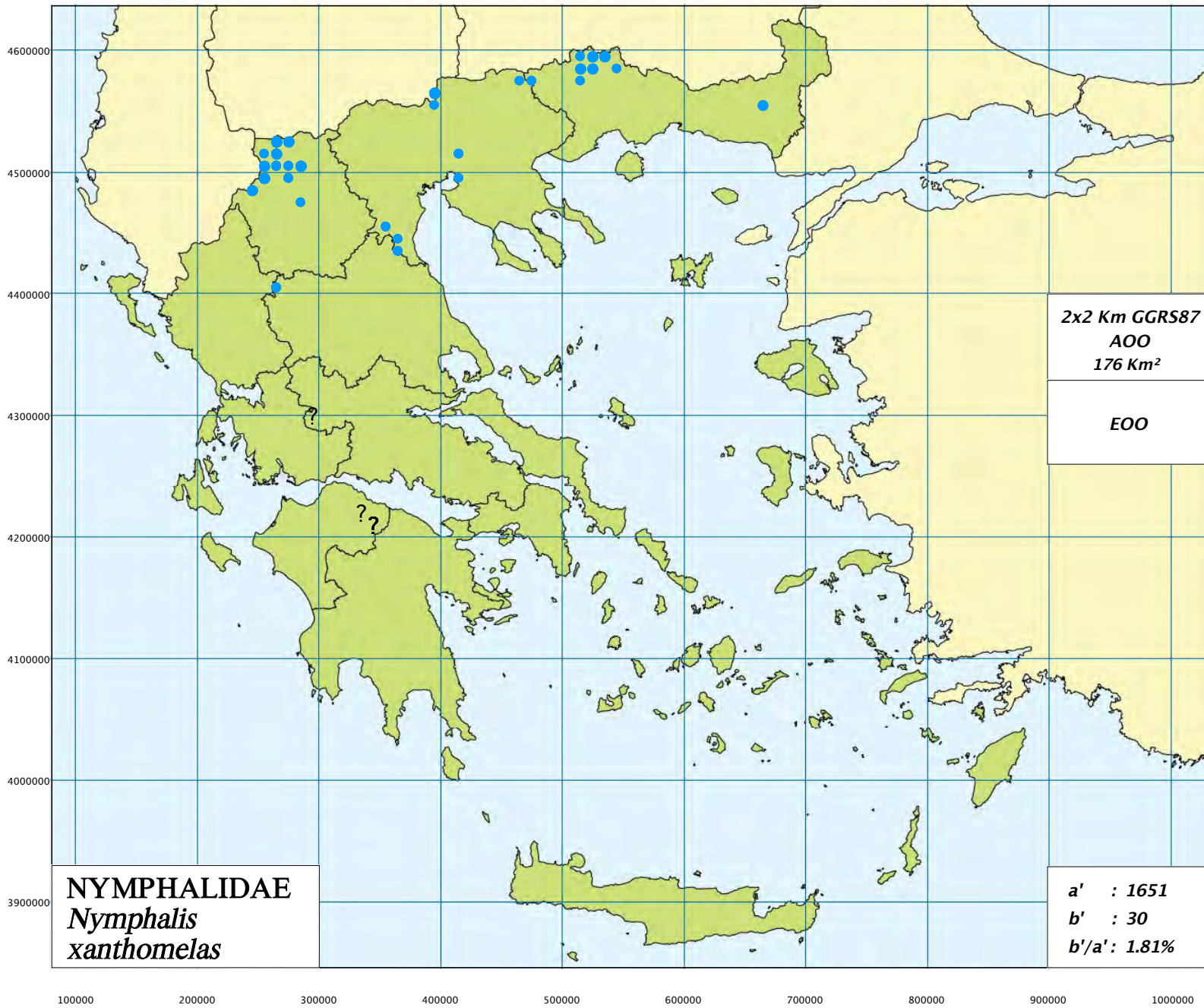


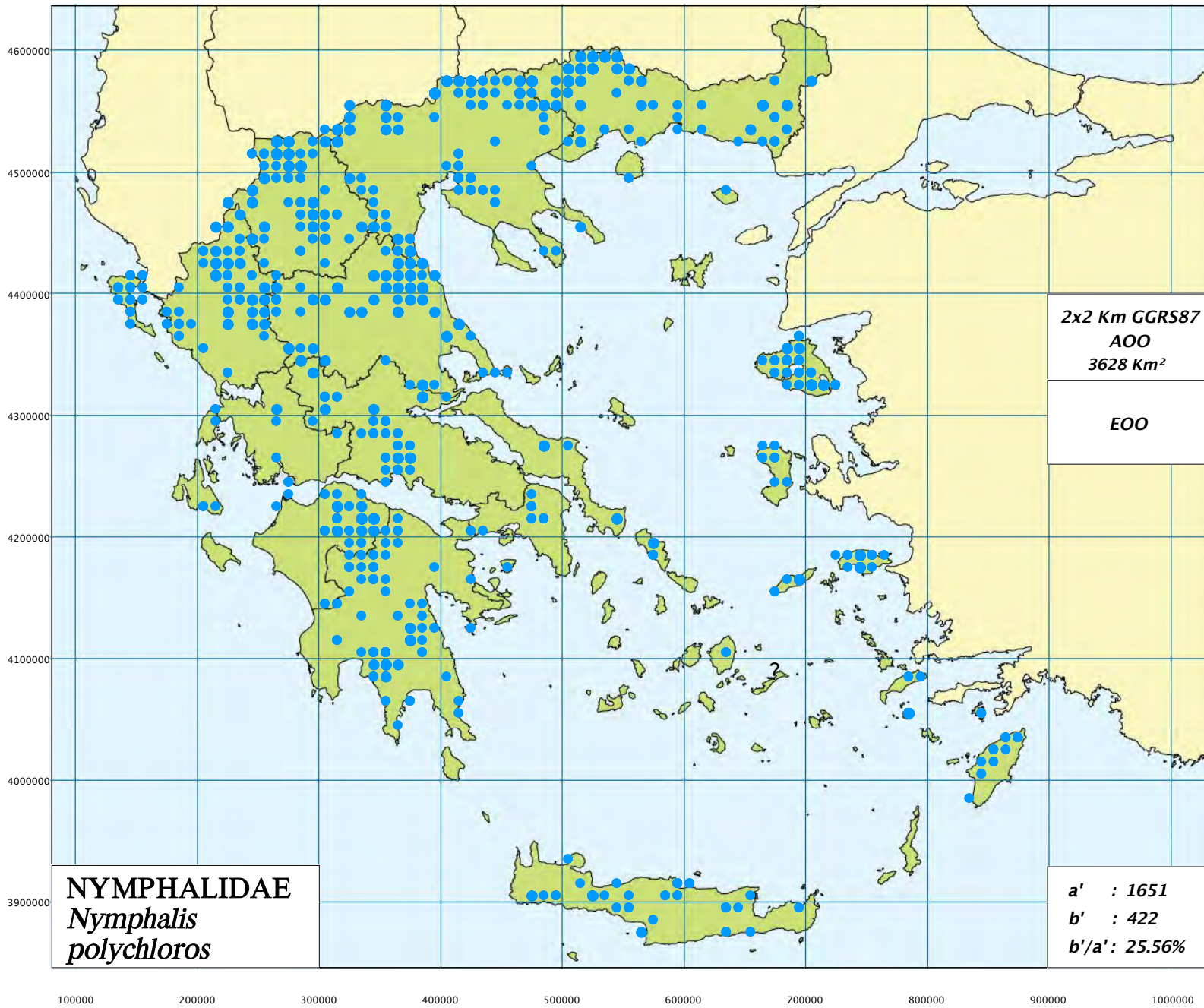


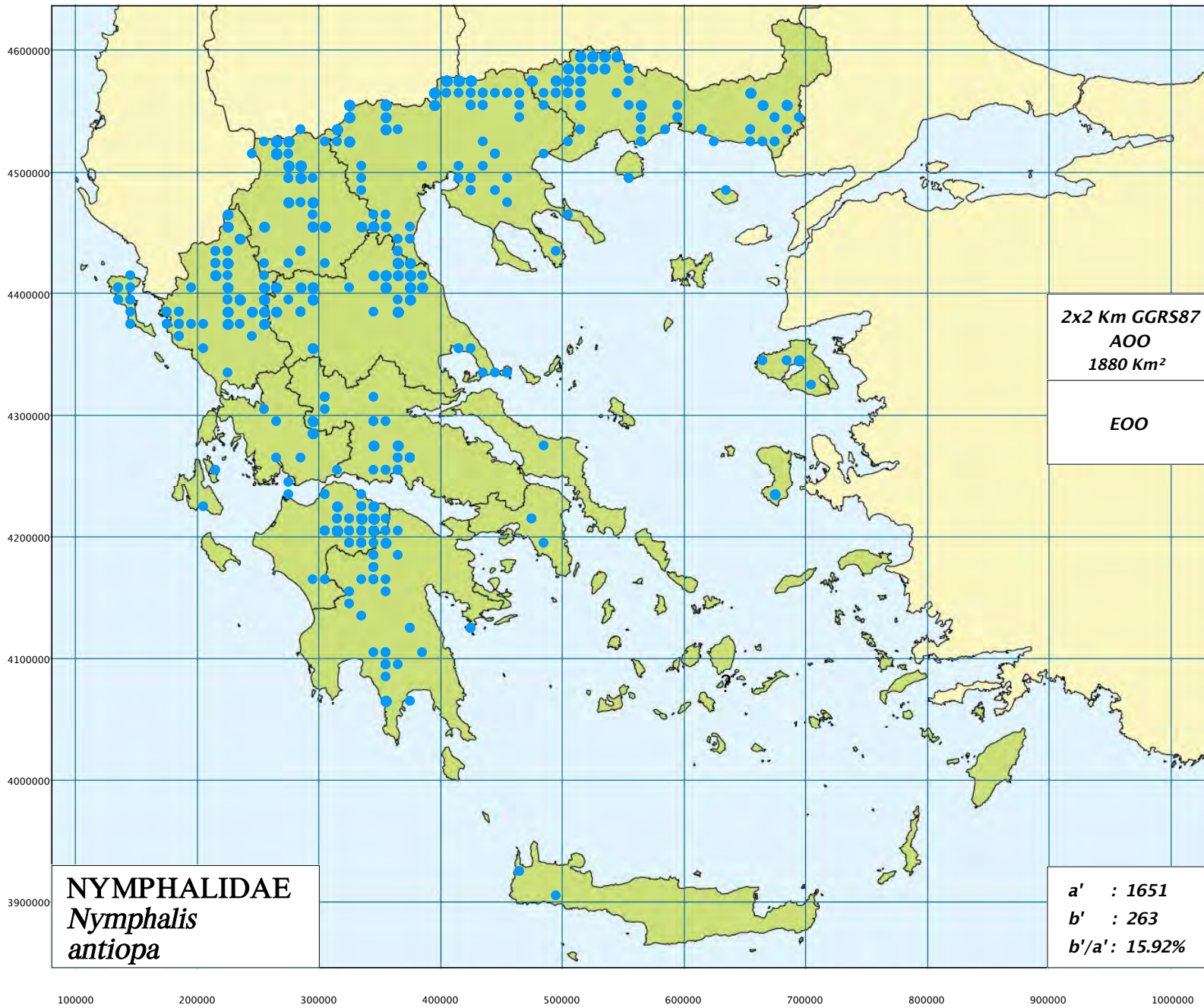


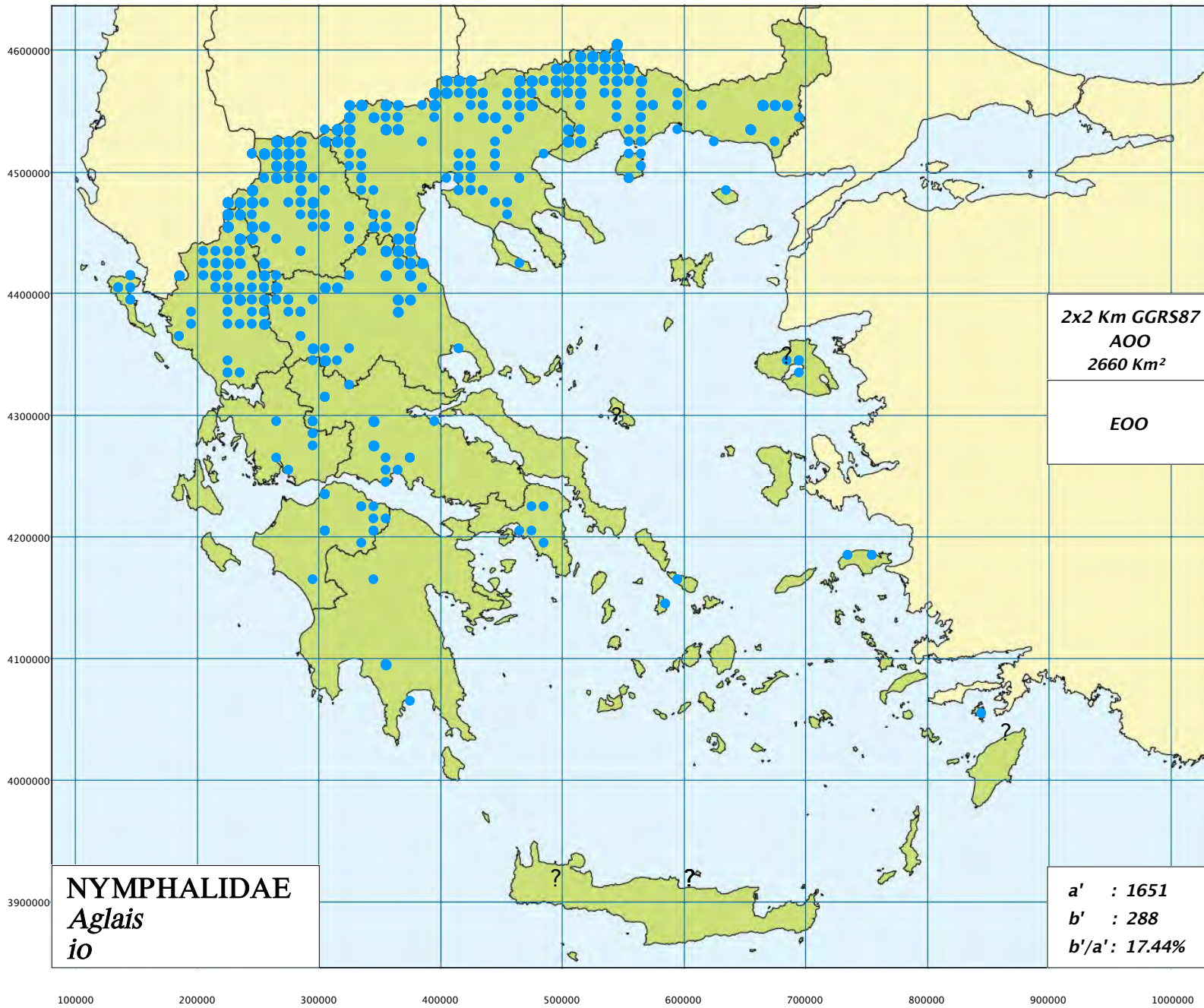


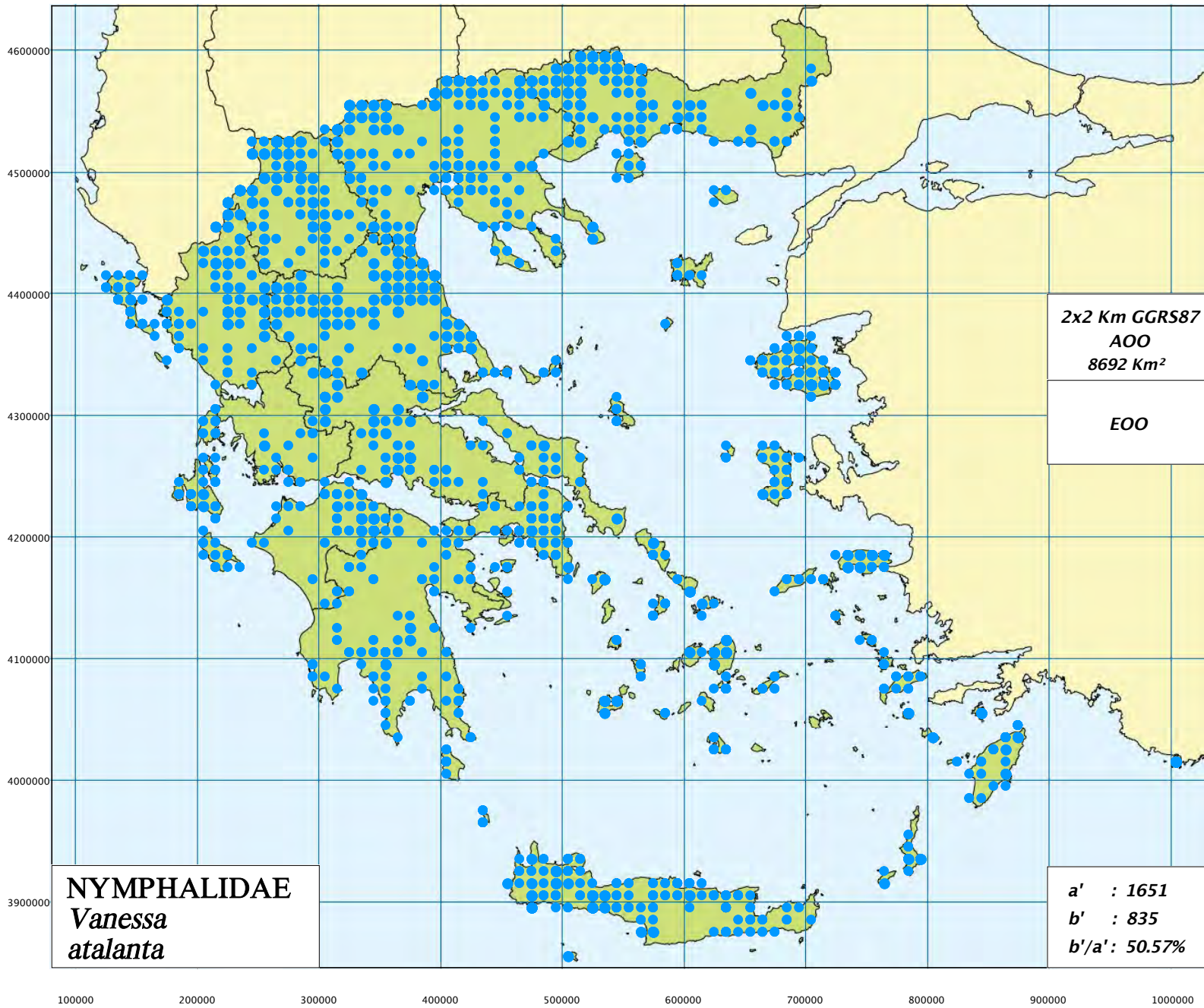


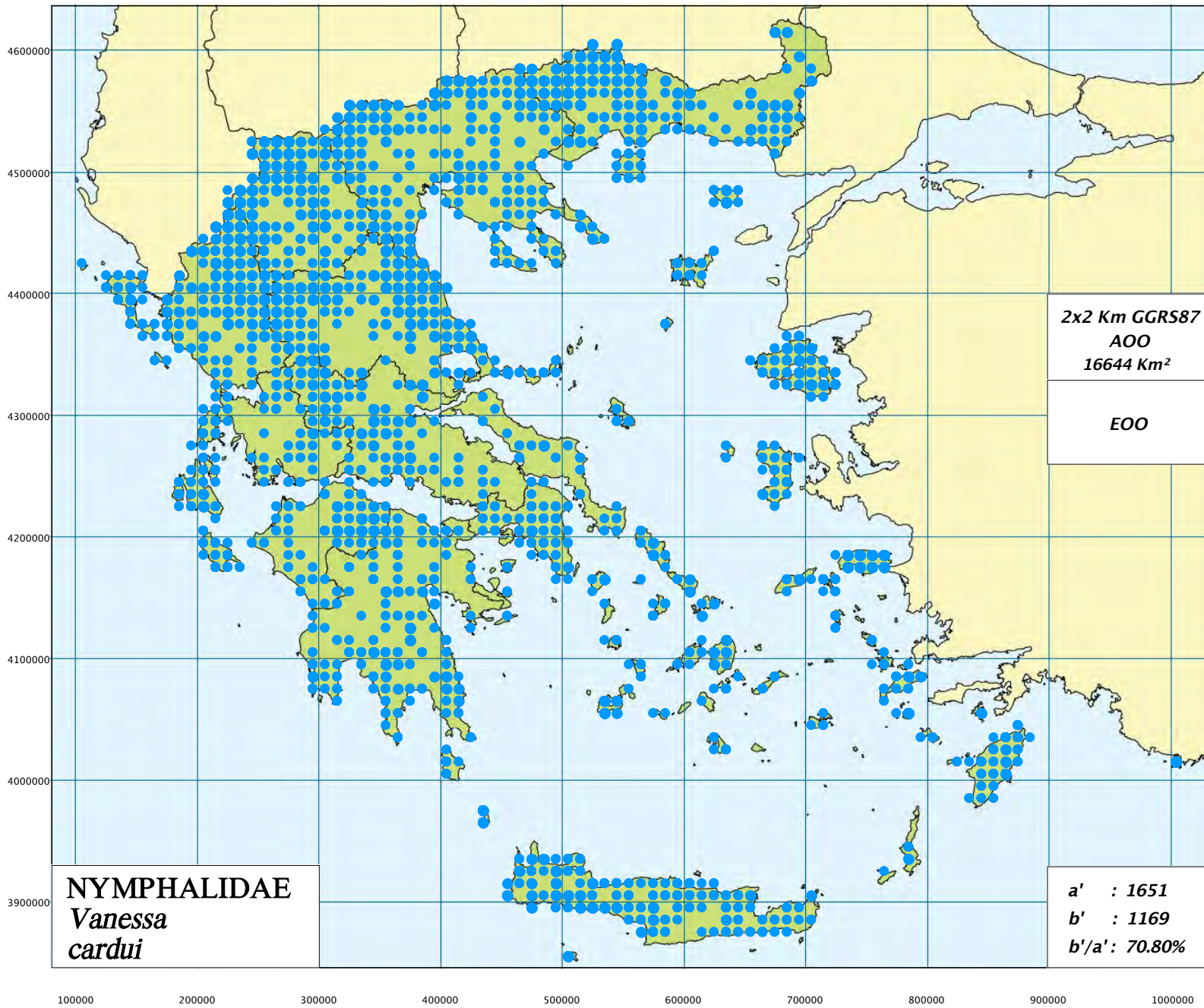


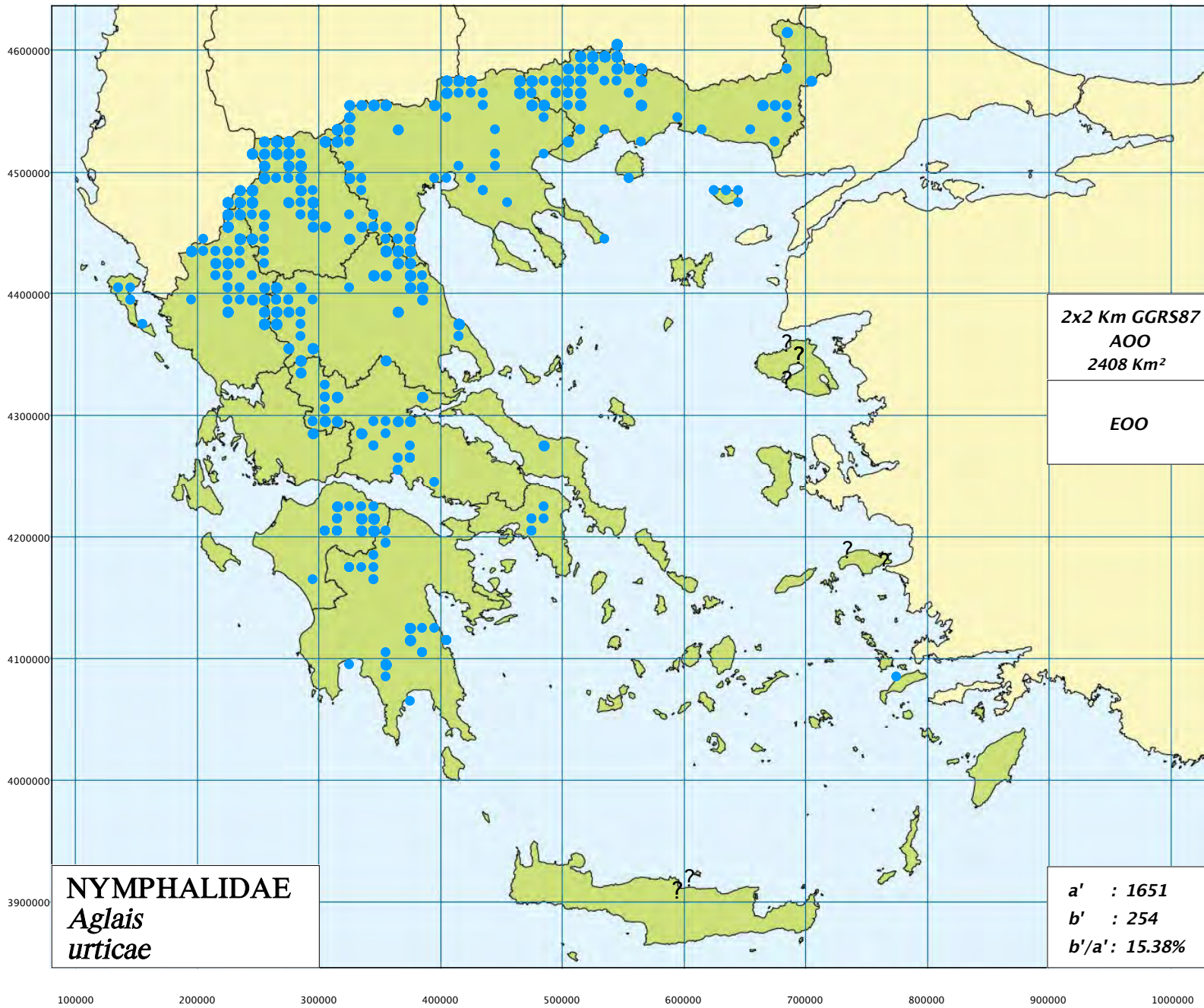


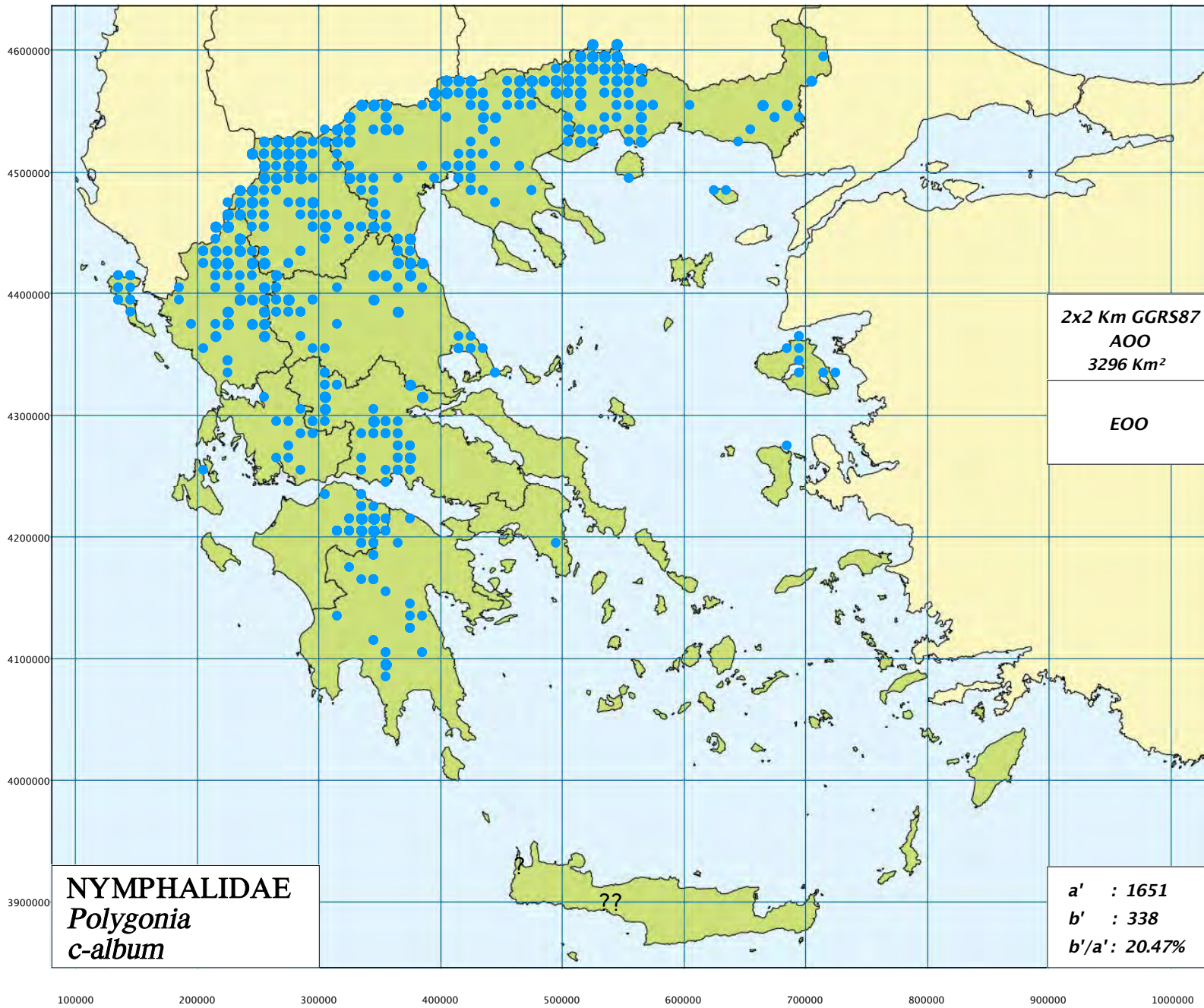












2x2 Km GGRS87
 AOO
 3296 Km²

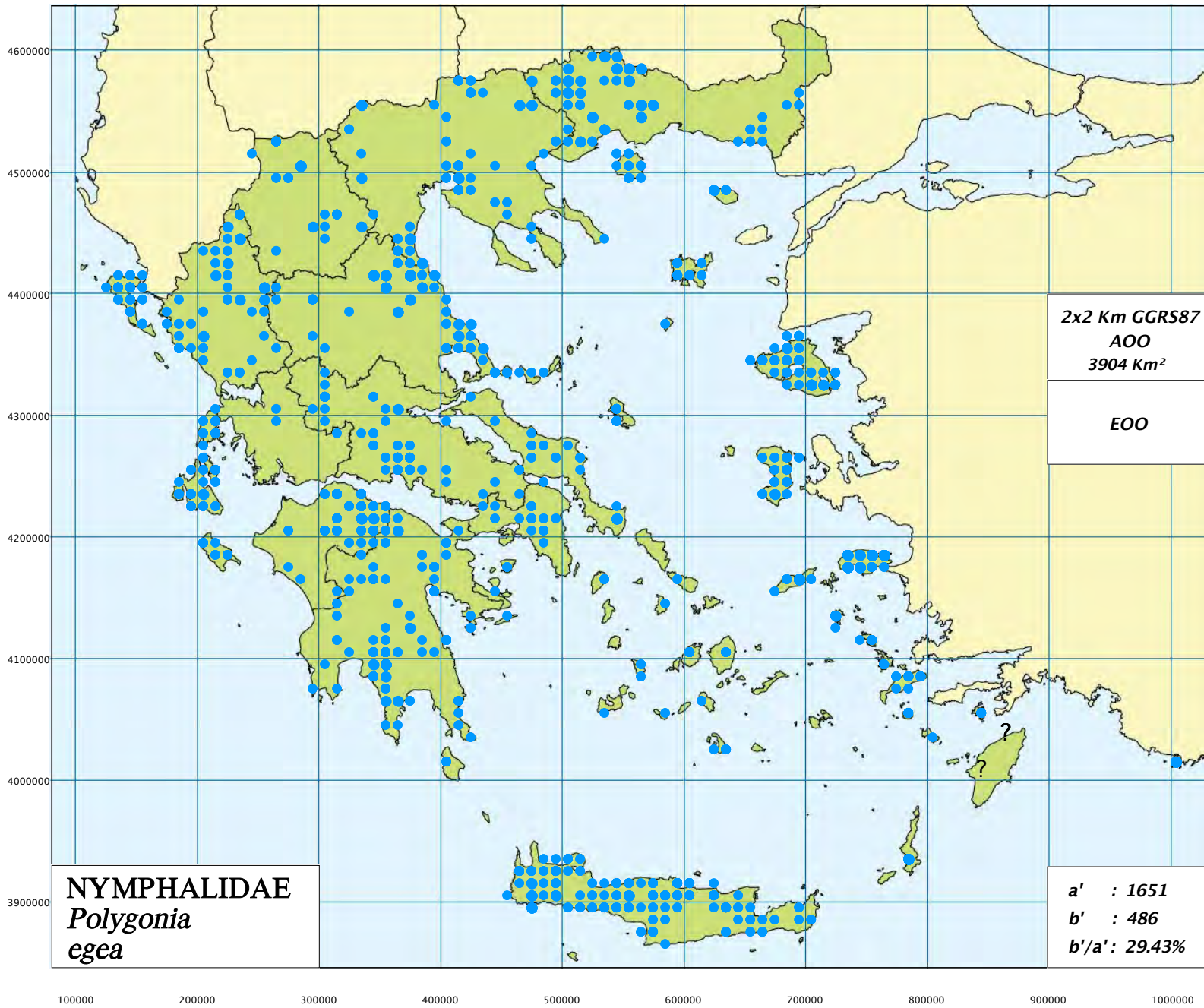
EOO

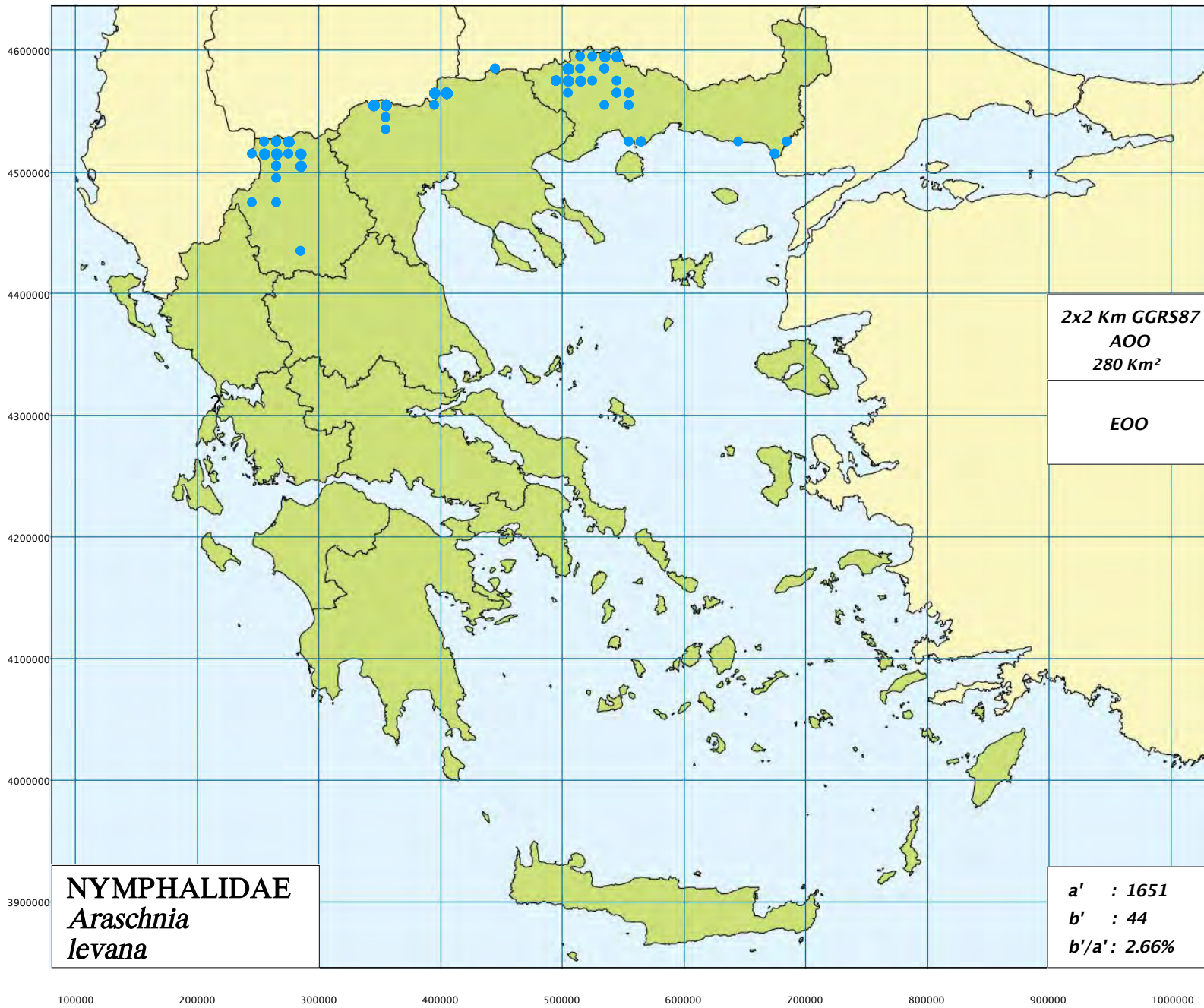
NYMPHALIDAE
Polygonia
c-album

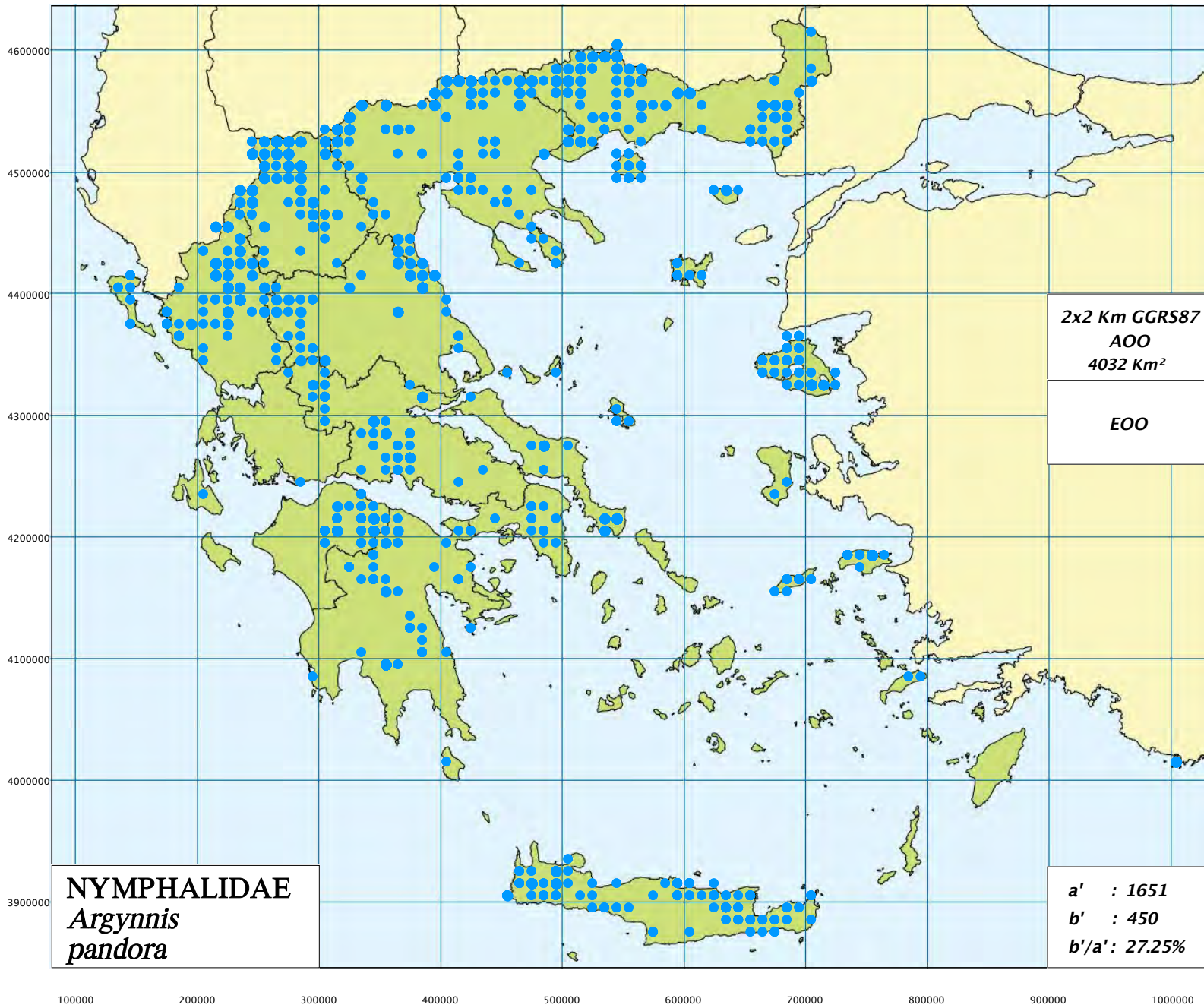
a' : 1651
b' : 338
b'/a' : 20.47%

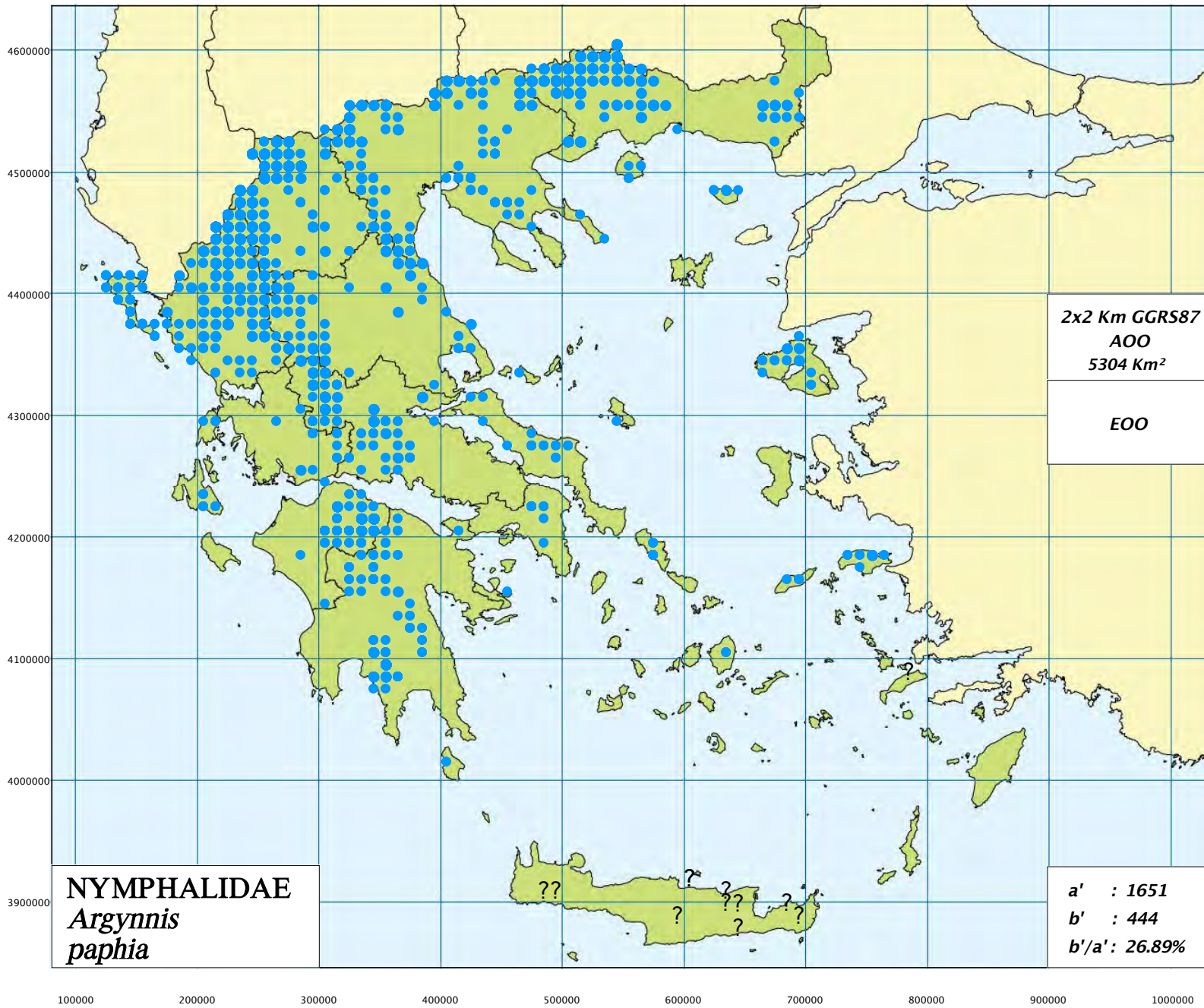
??

100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000









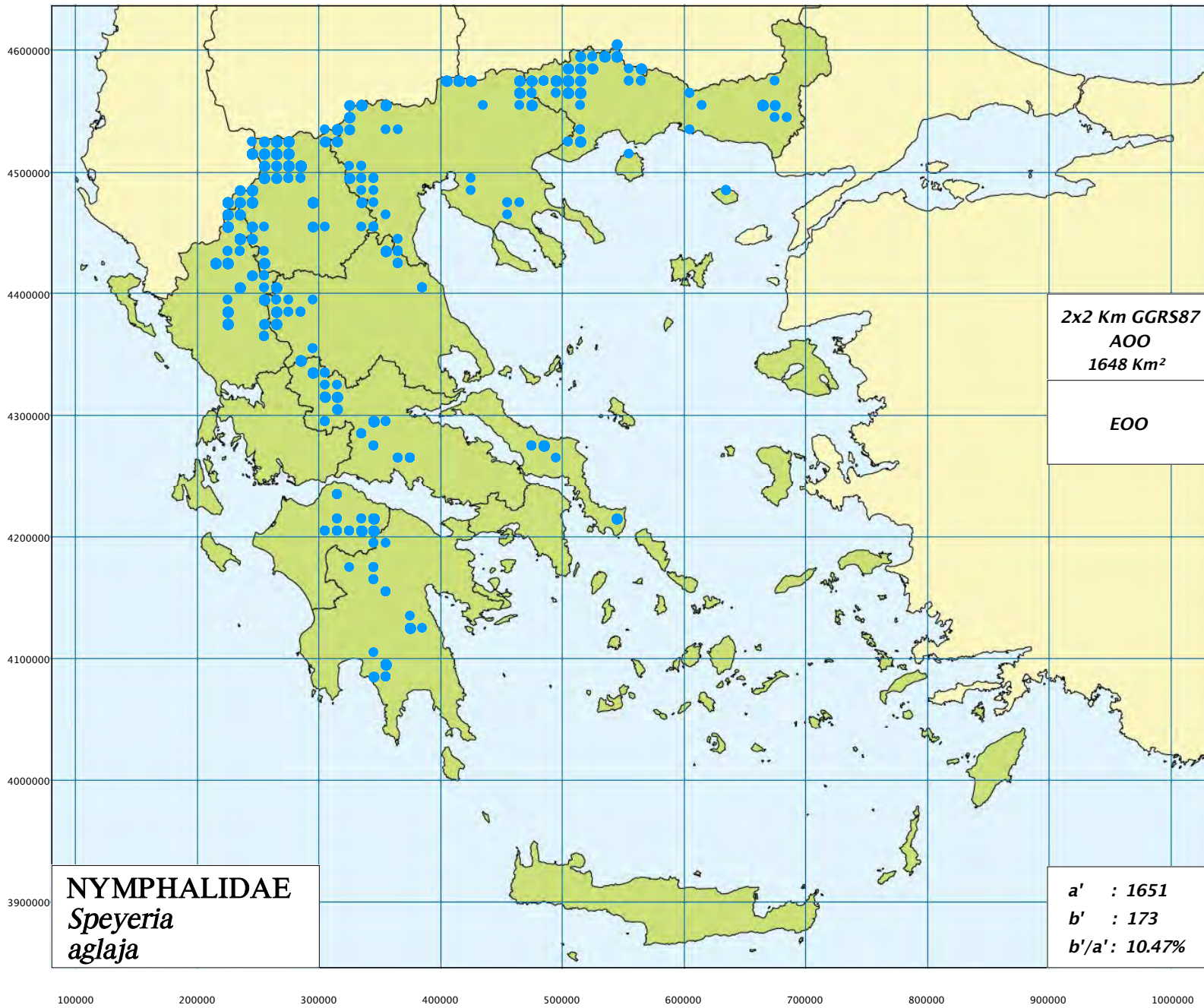
NYMPHALIDAE
Argynnis
paphia

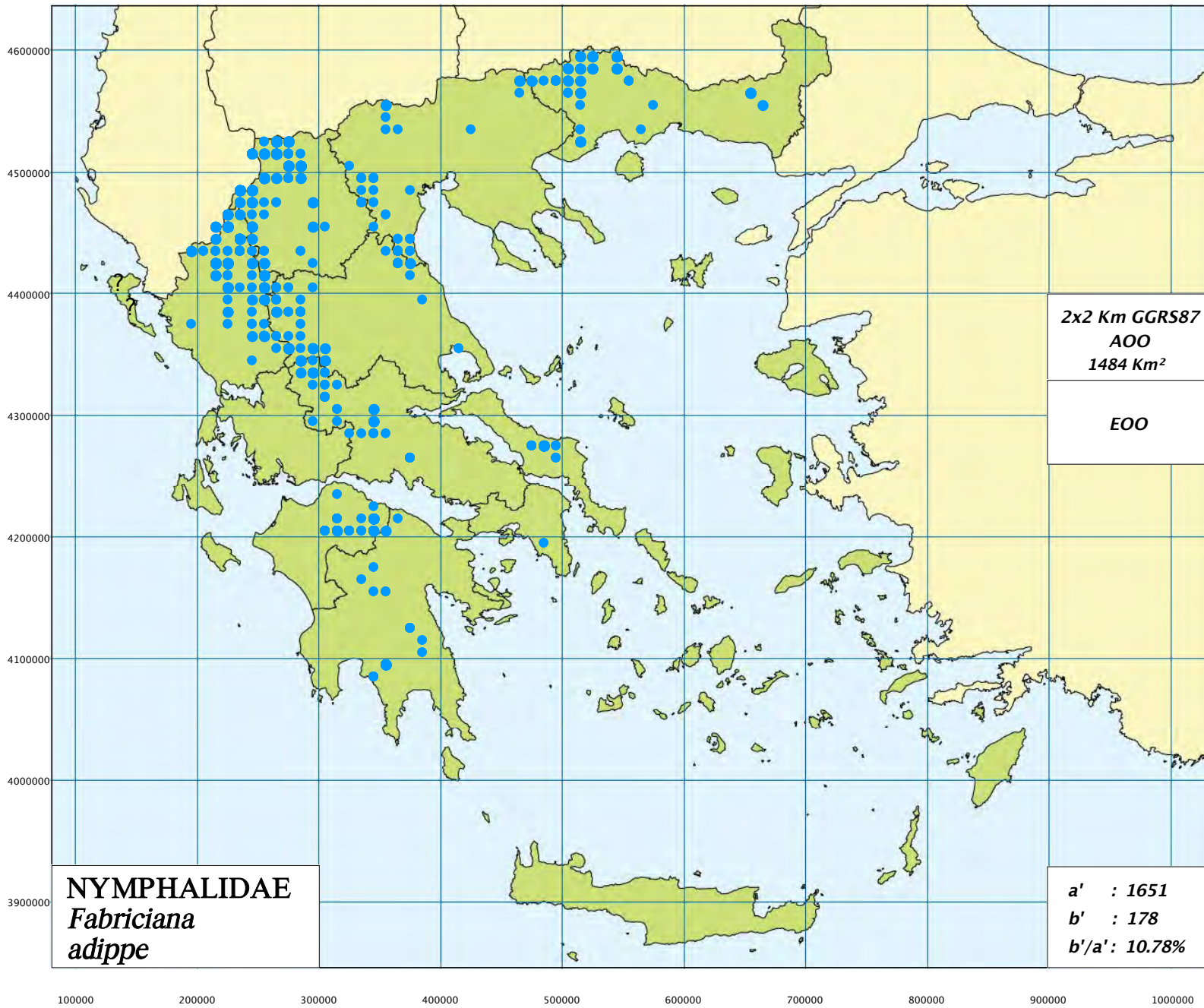
2x2 Km GGRS87
 AOO
 5304 Km²

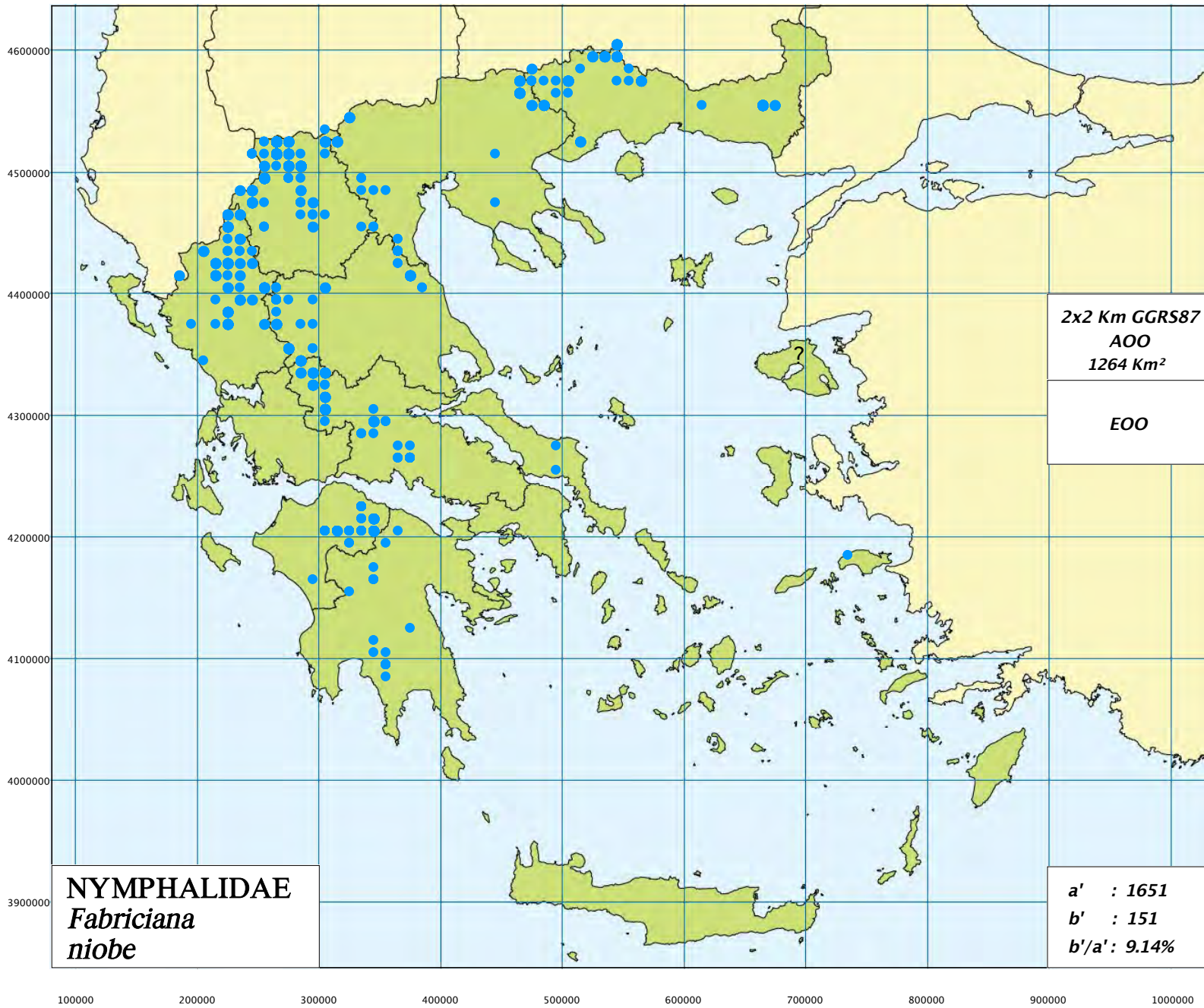
EOO

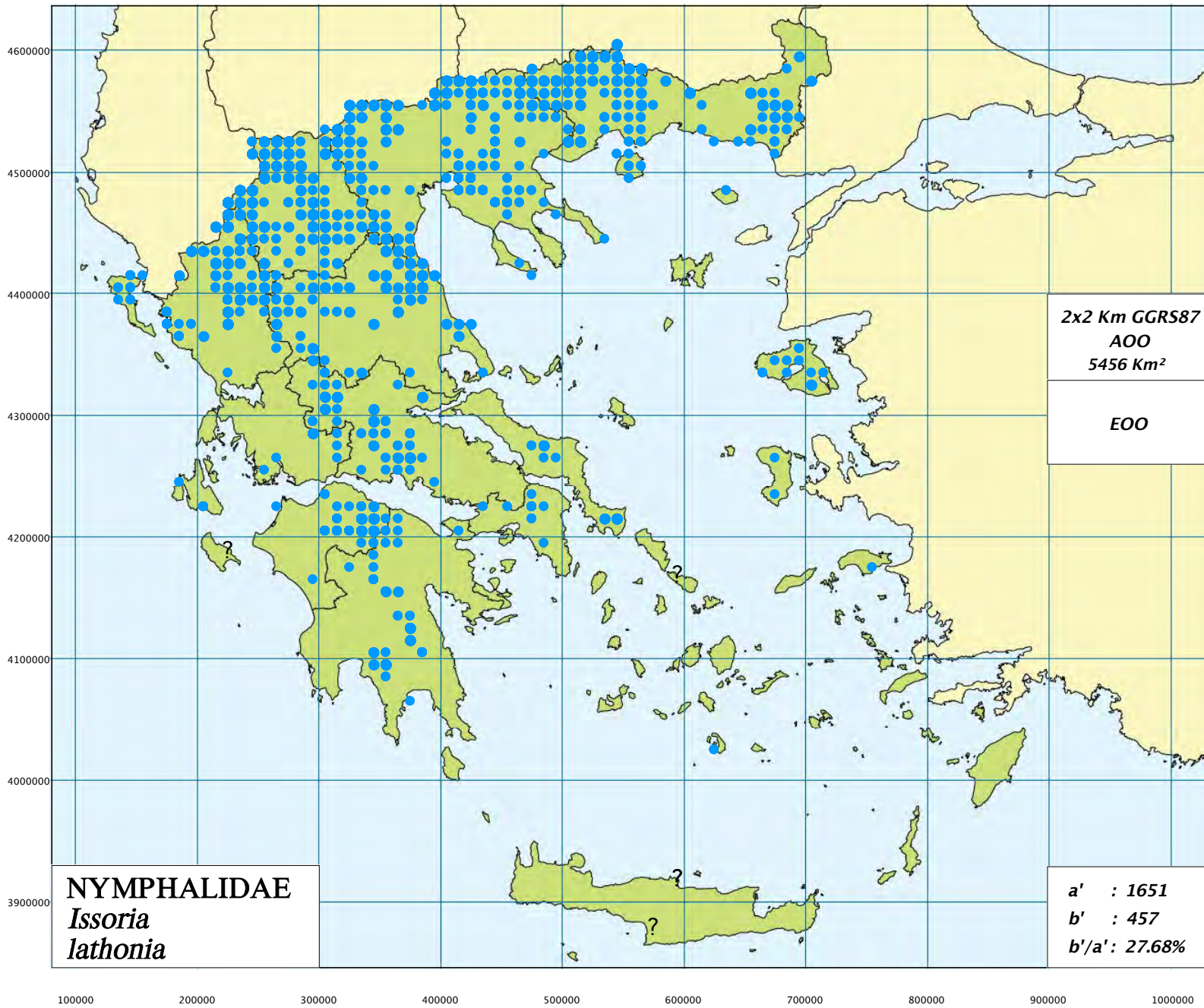
a' : 1651
b' : 444
b'/a' : 26.89%

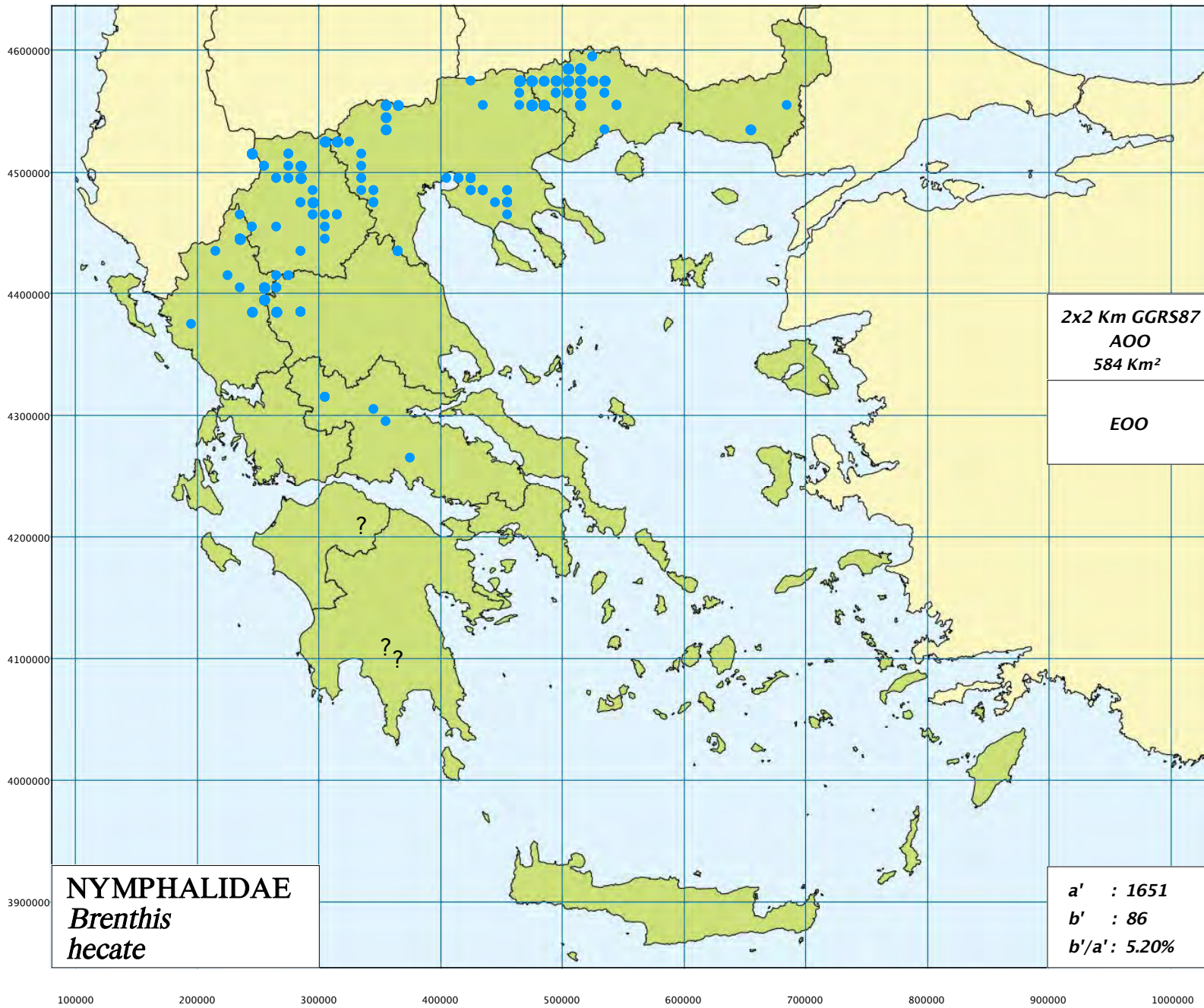
100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000

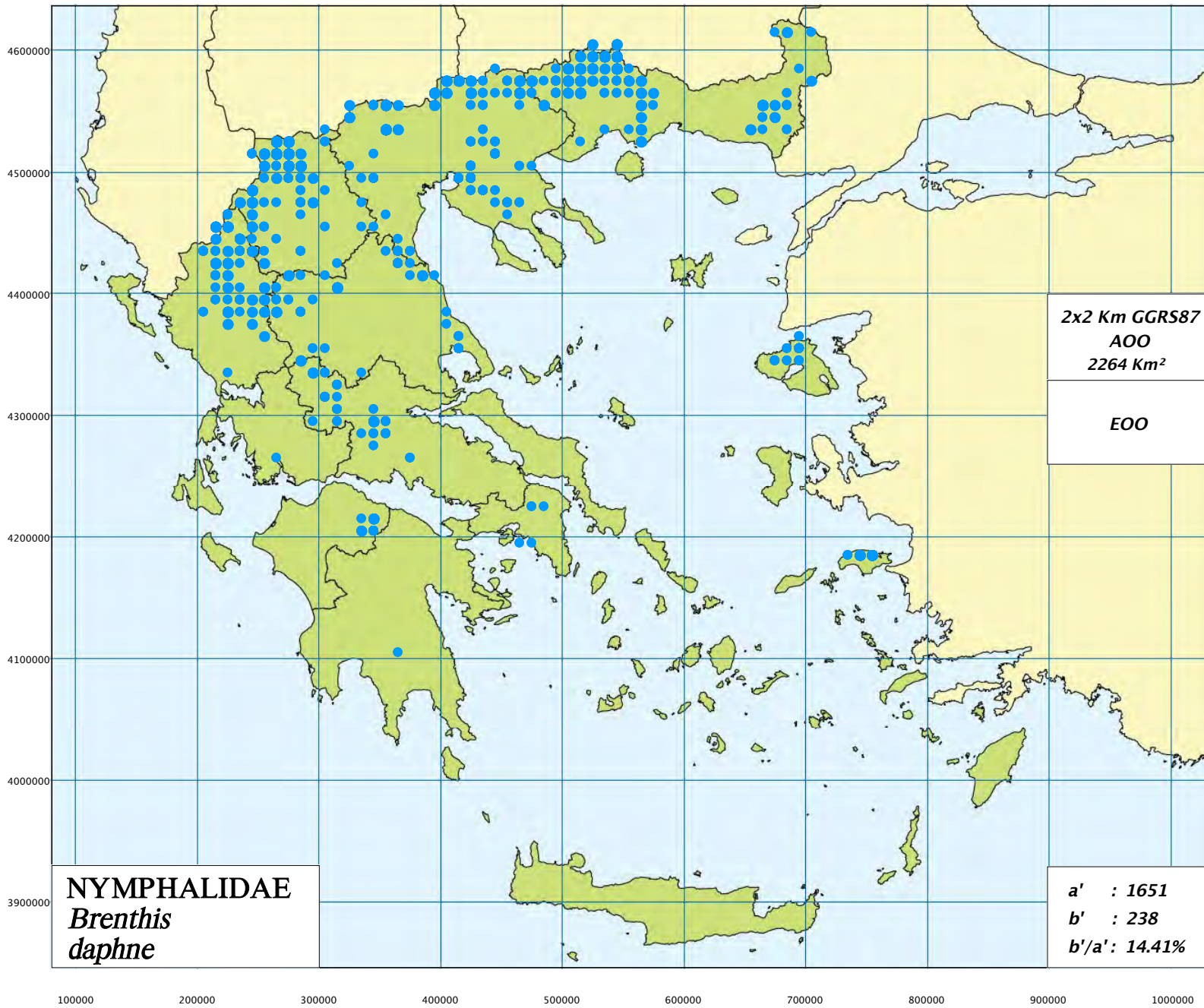


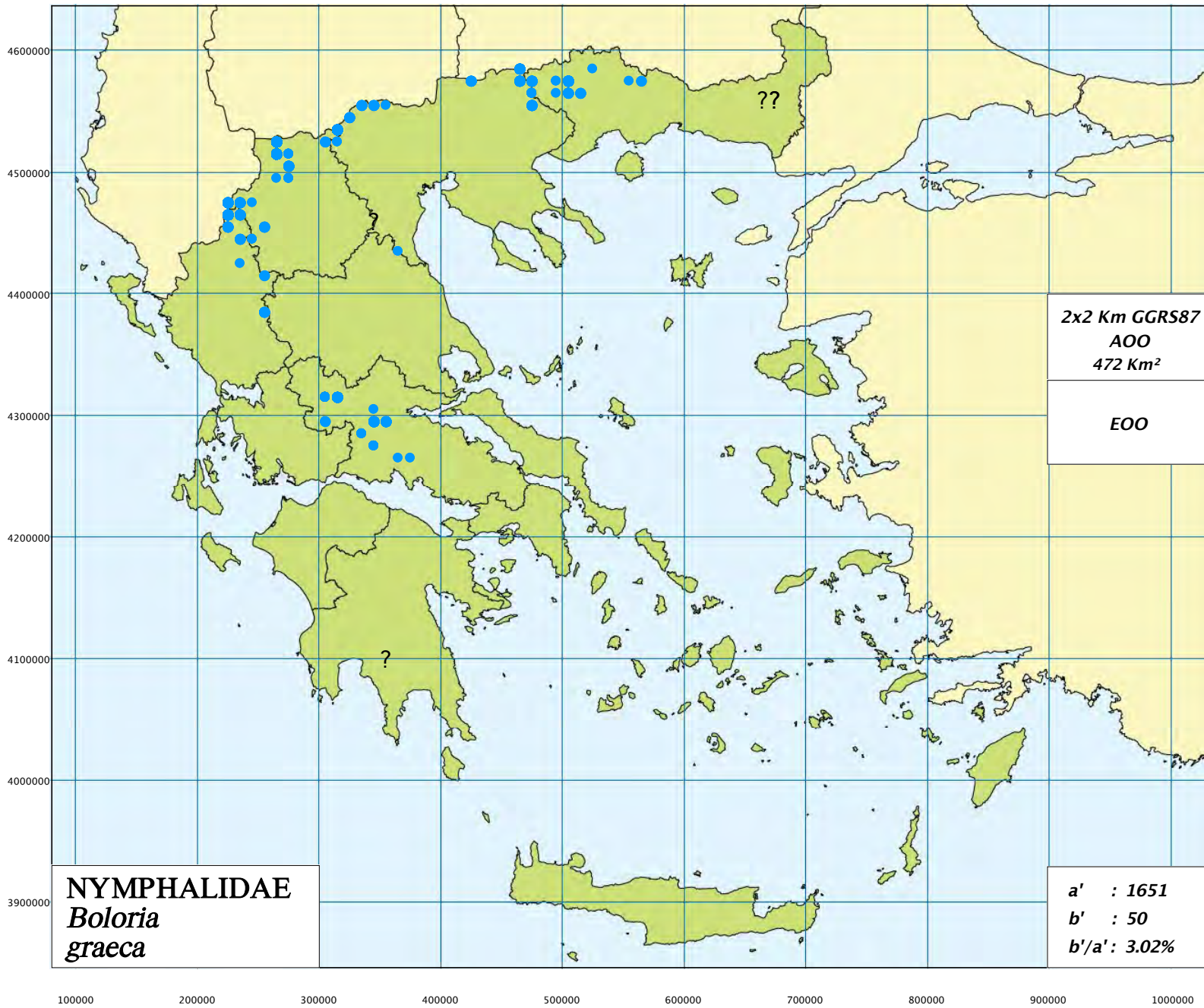


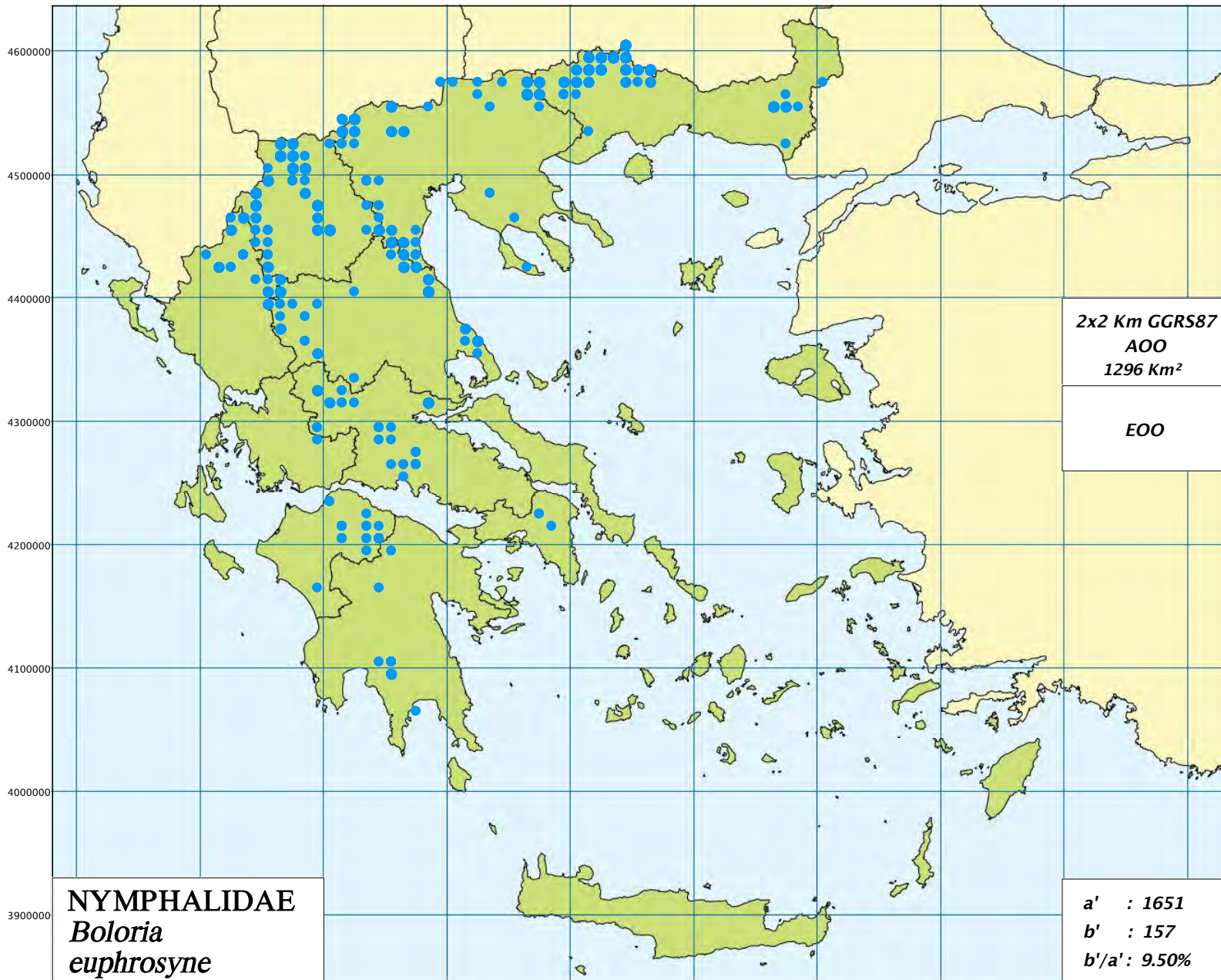


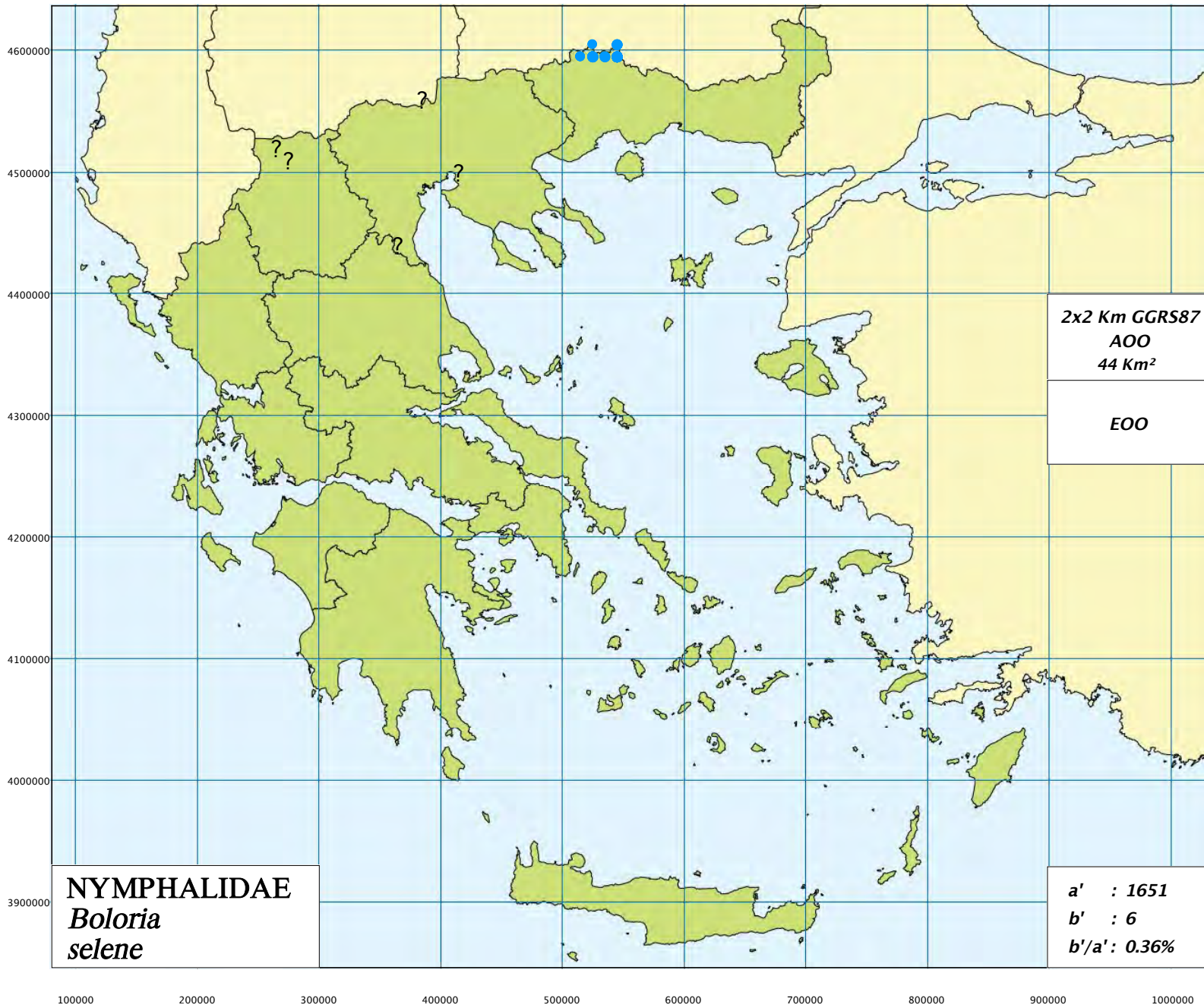


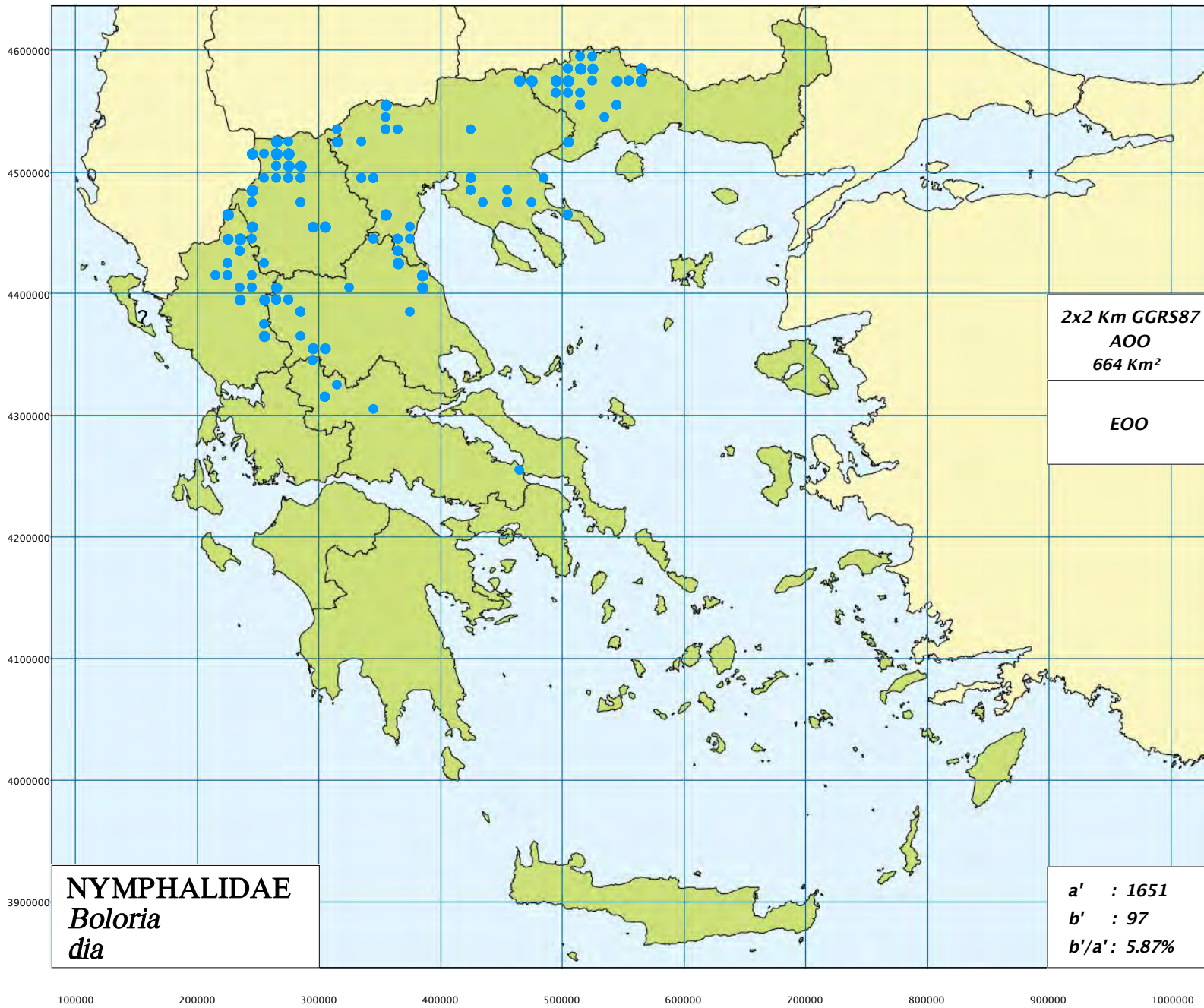


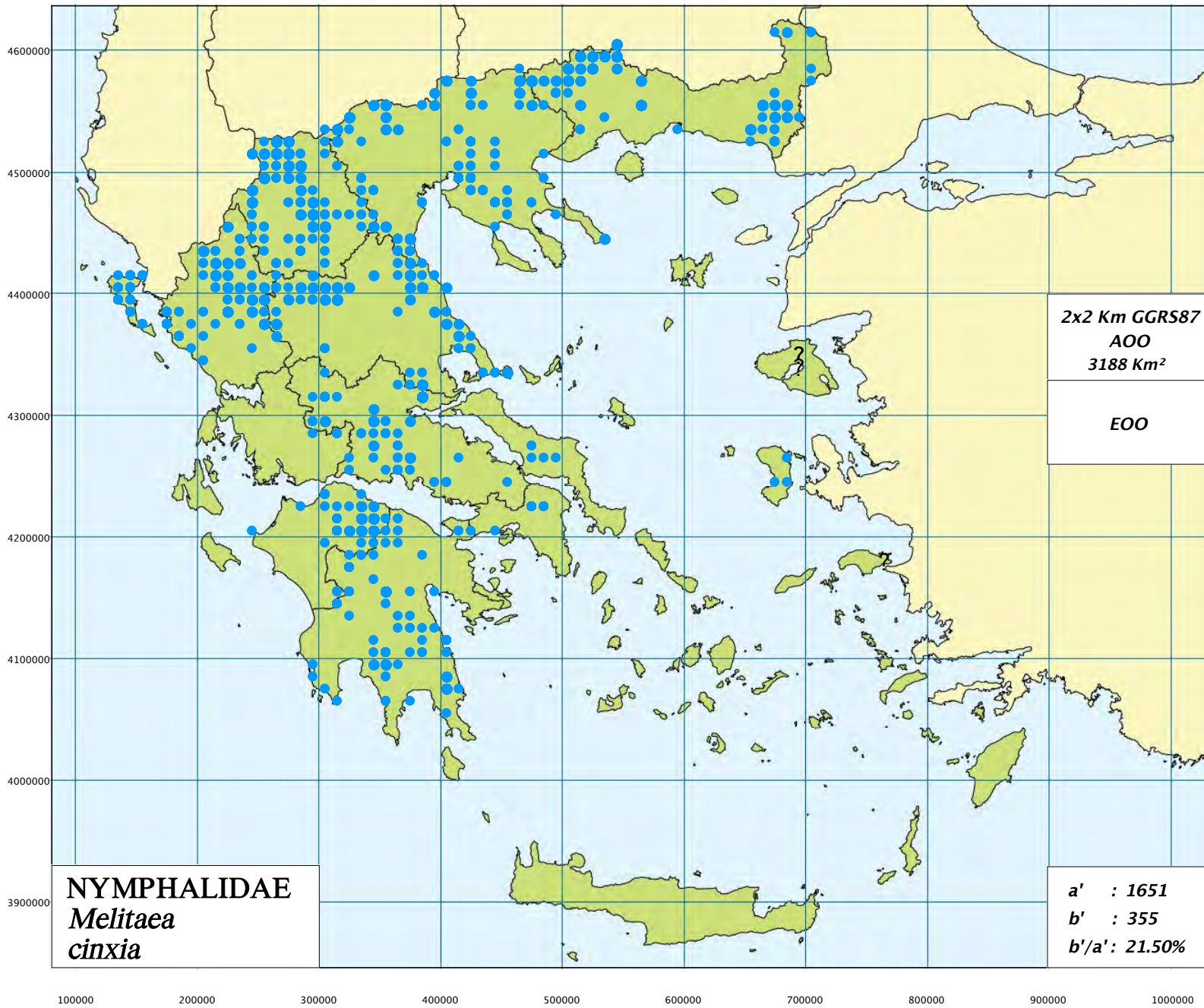


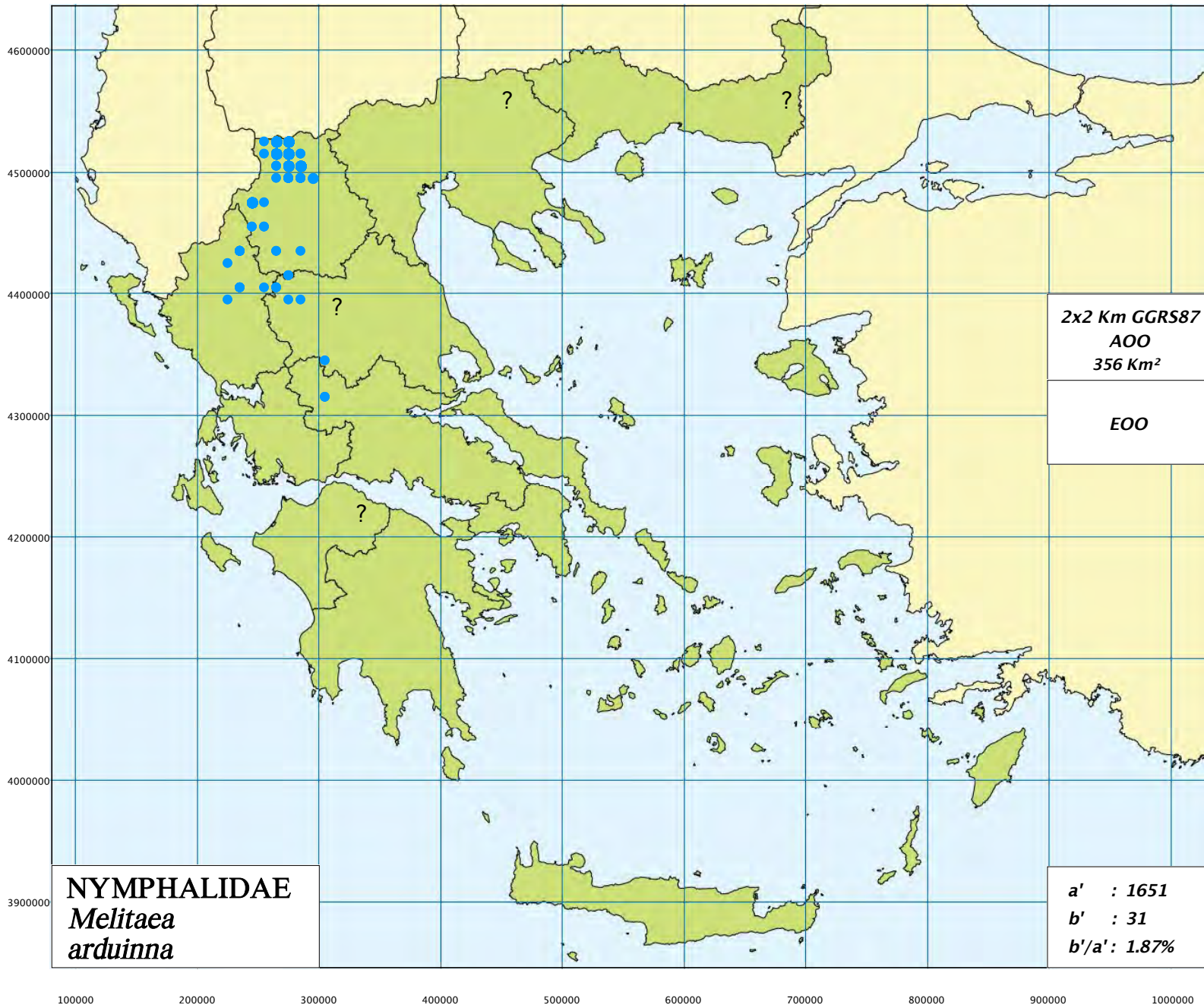


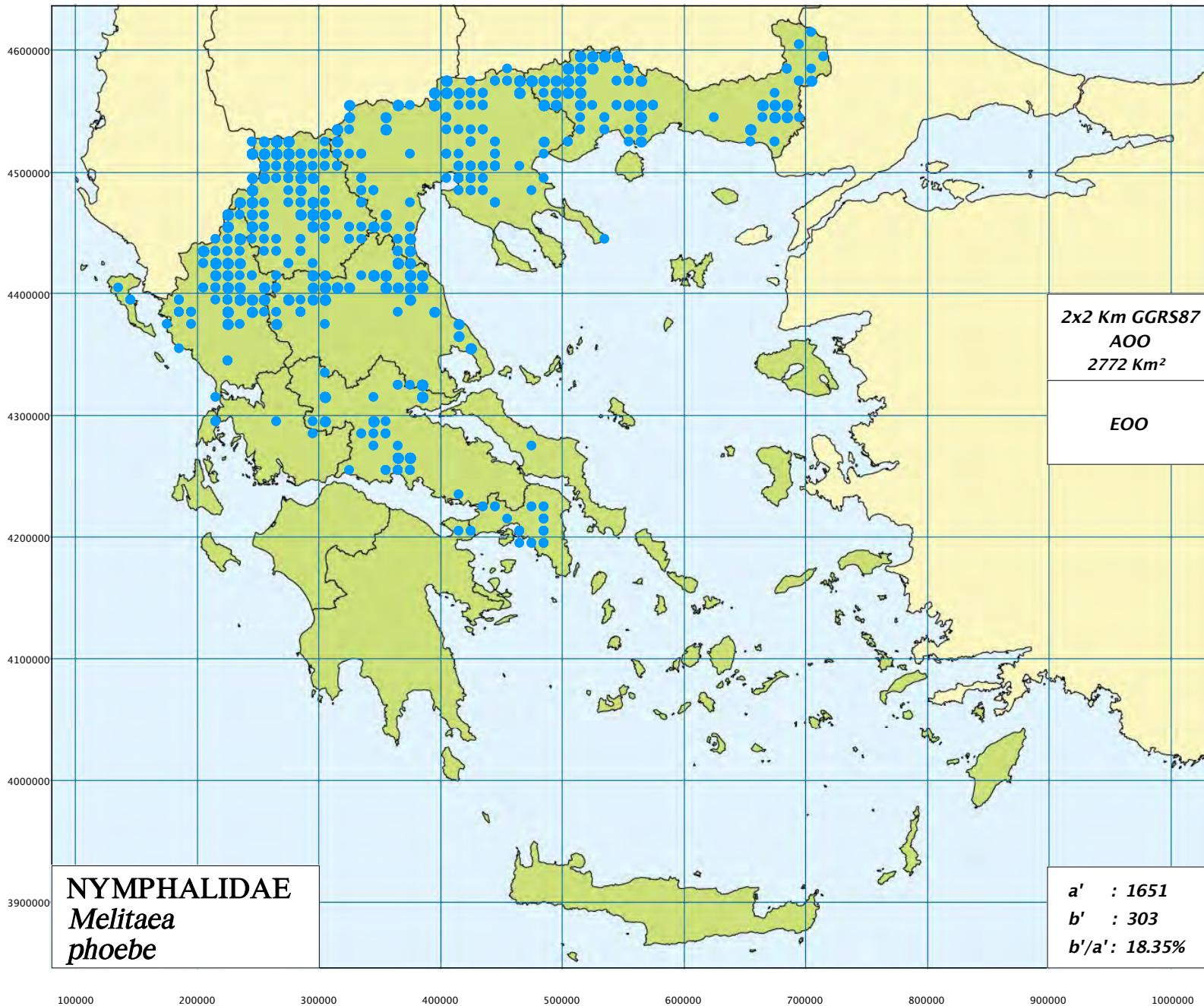


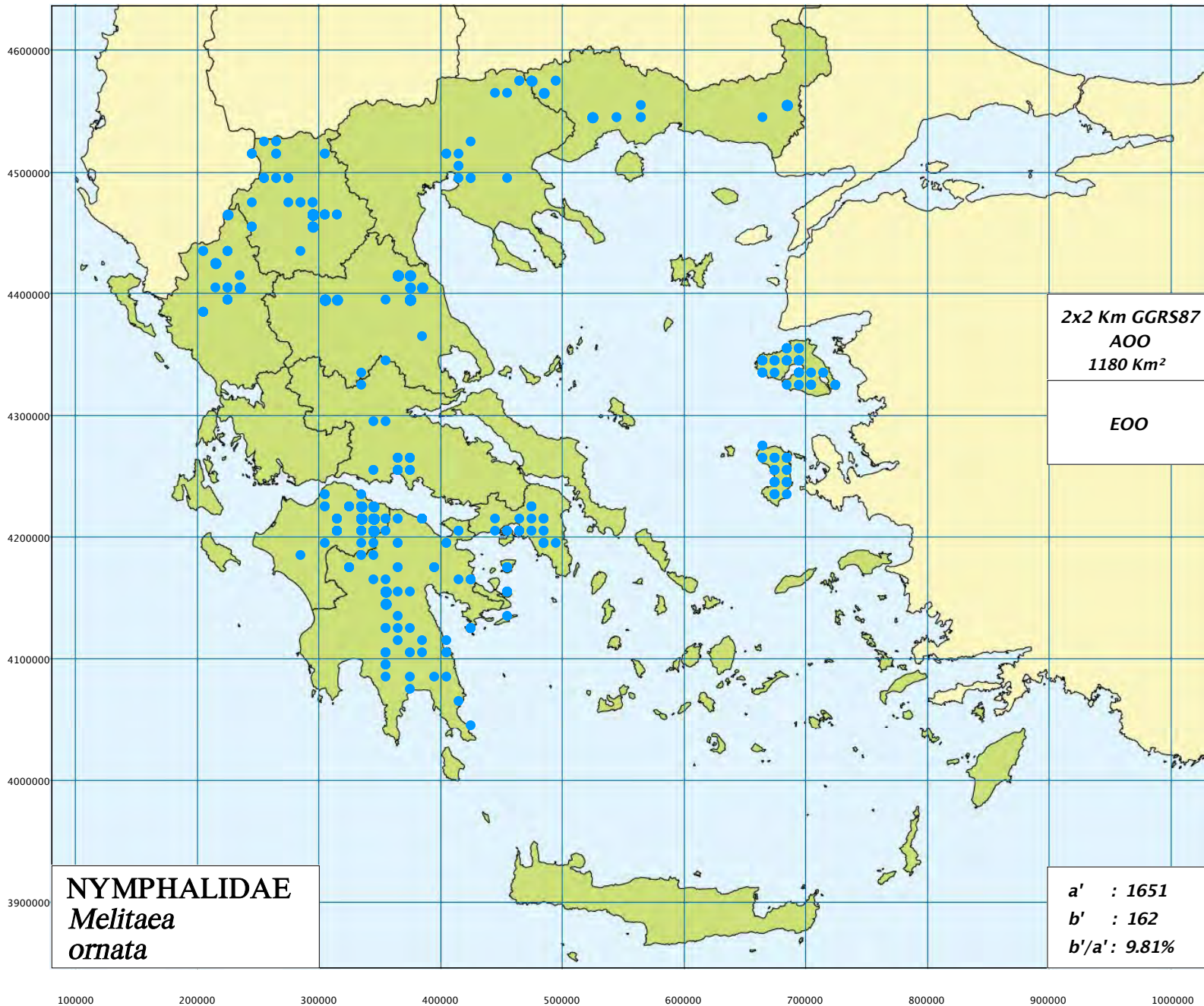




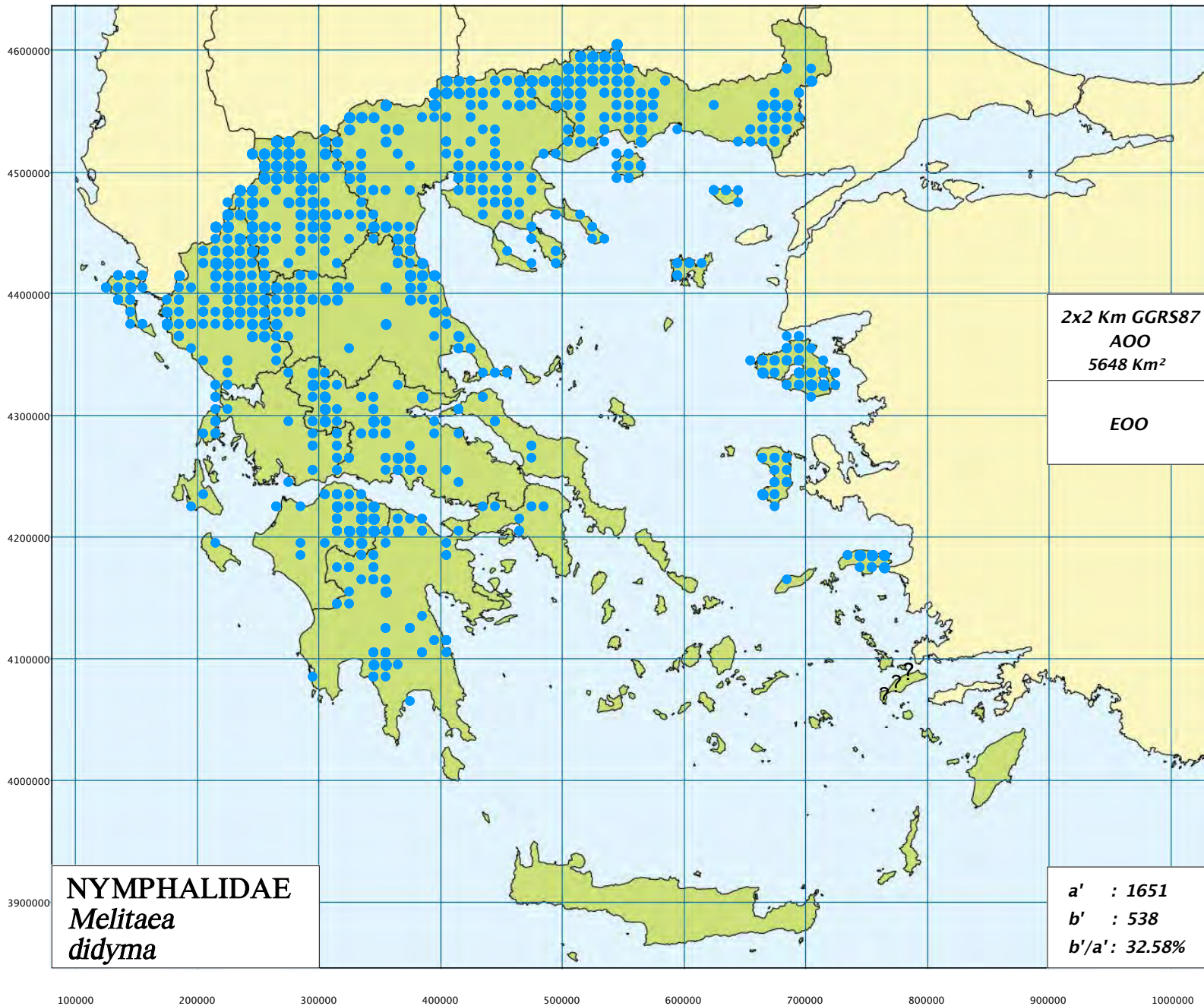




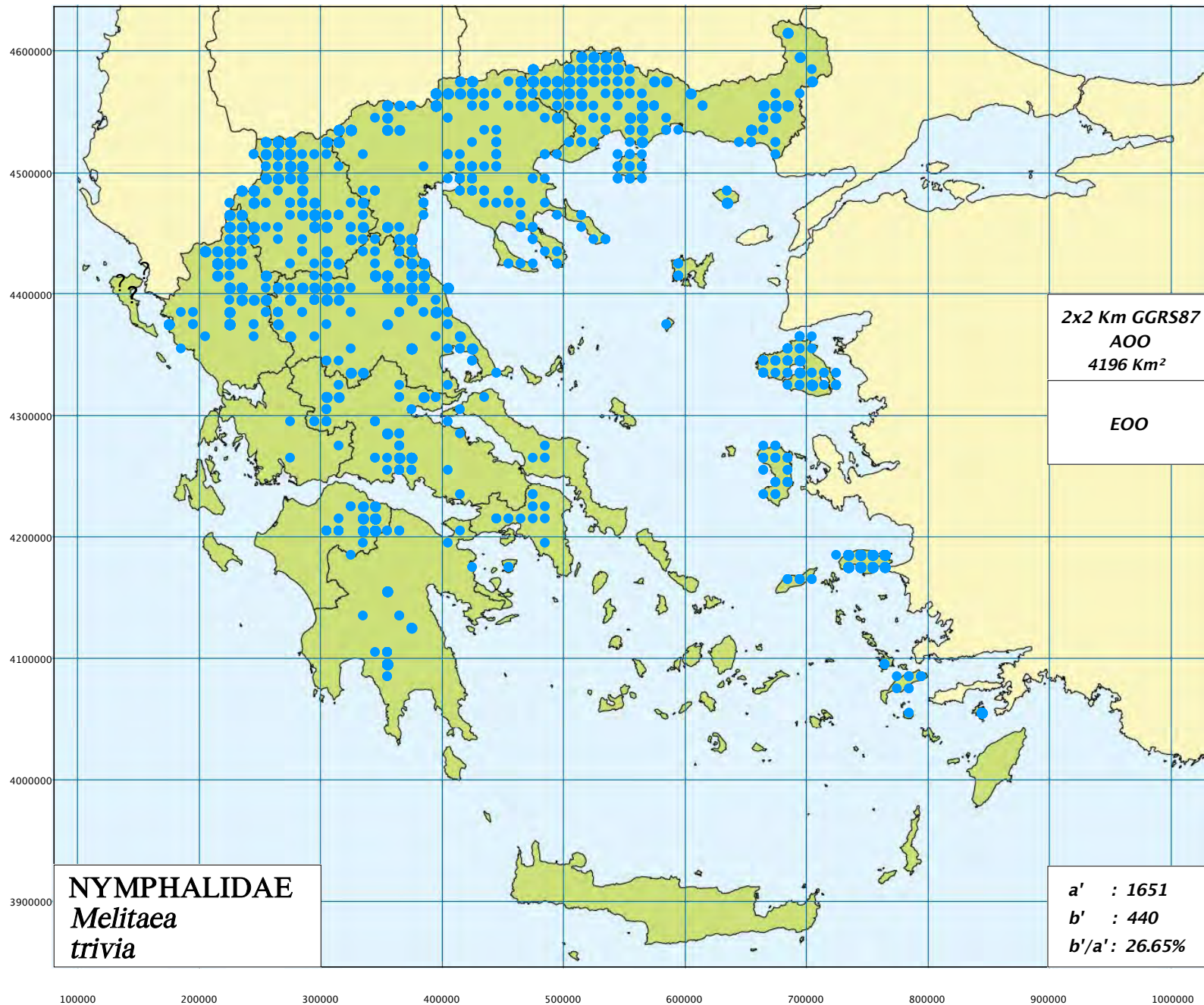




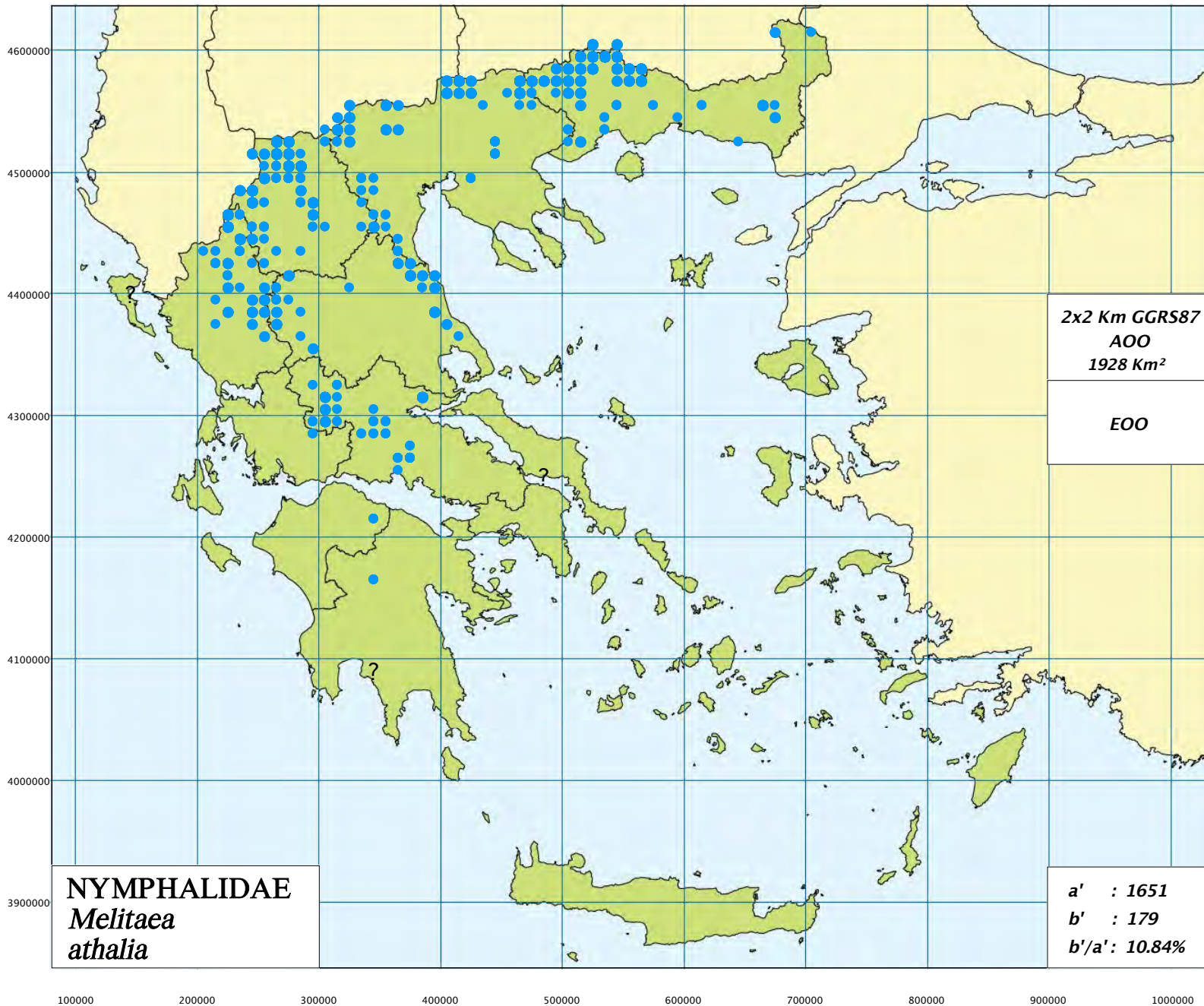
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https://www.pamperis.gr/PHOTOGRAPHS/Melitaea_didyma,_Melitaea_trivia.html

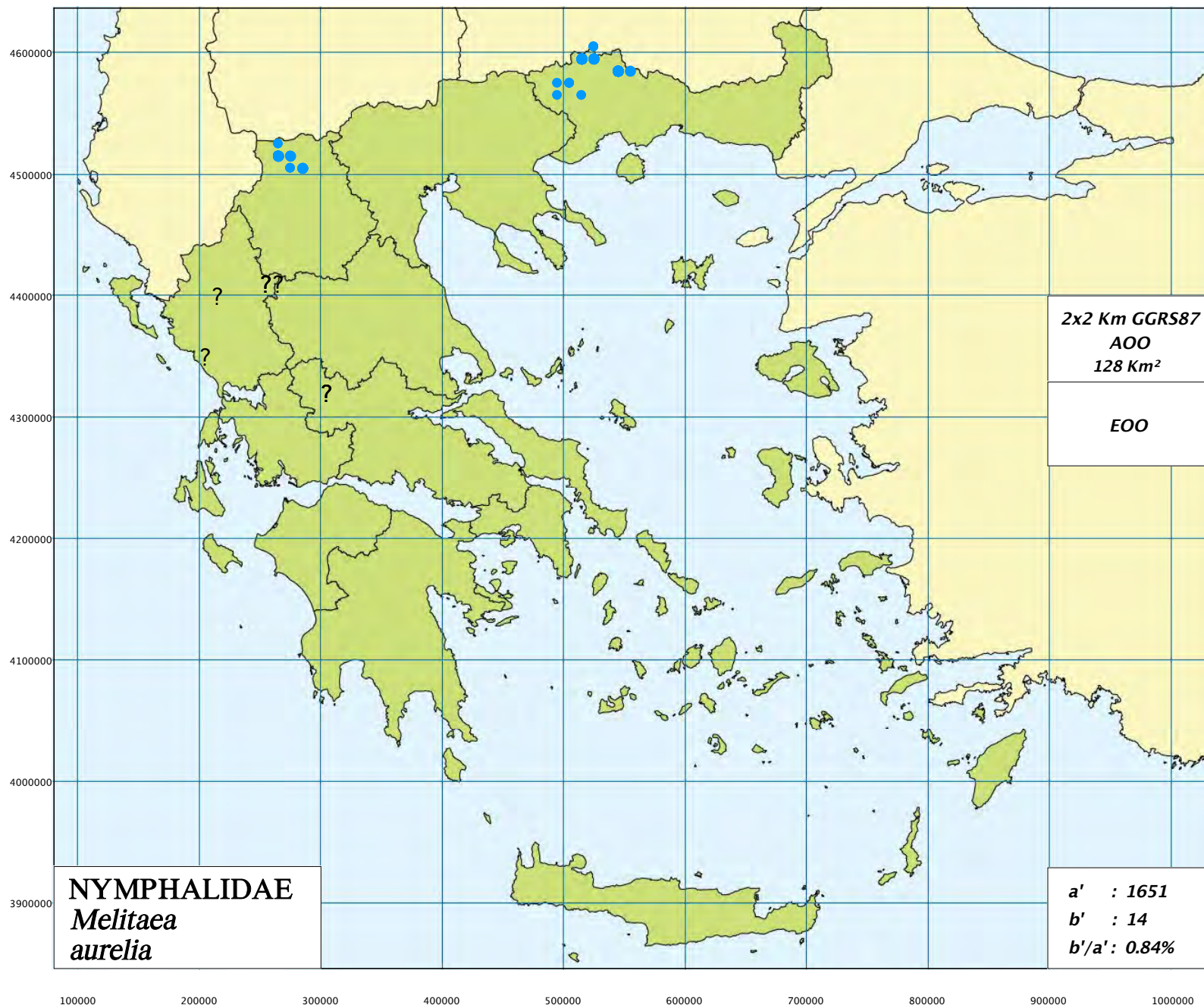


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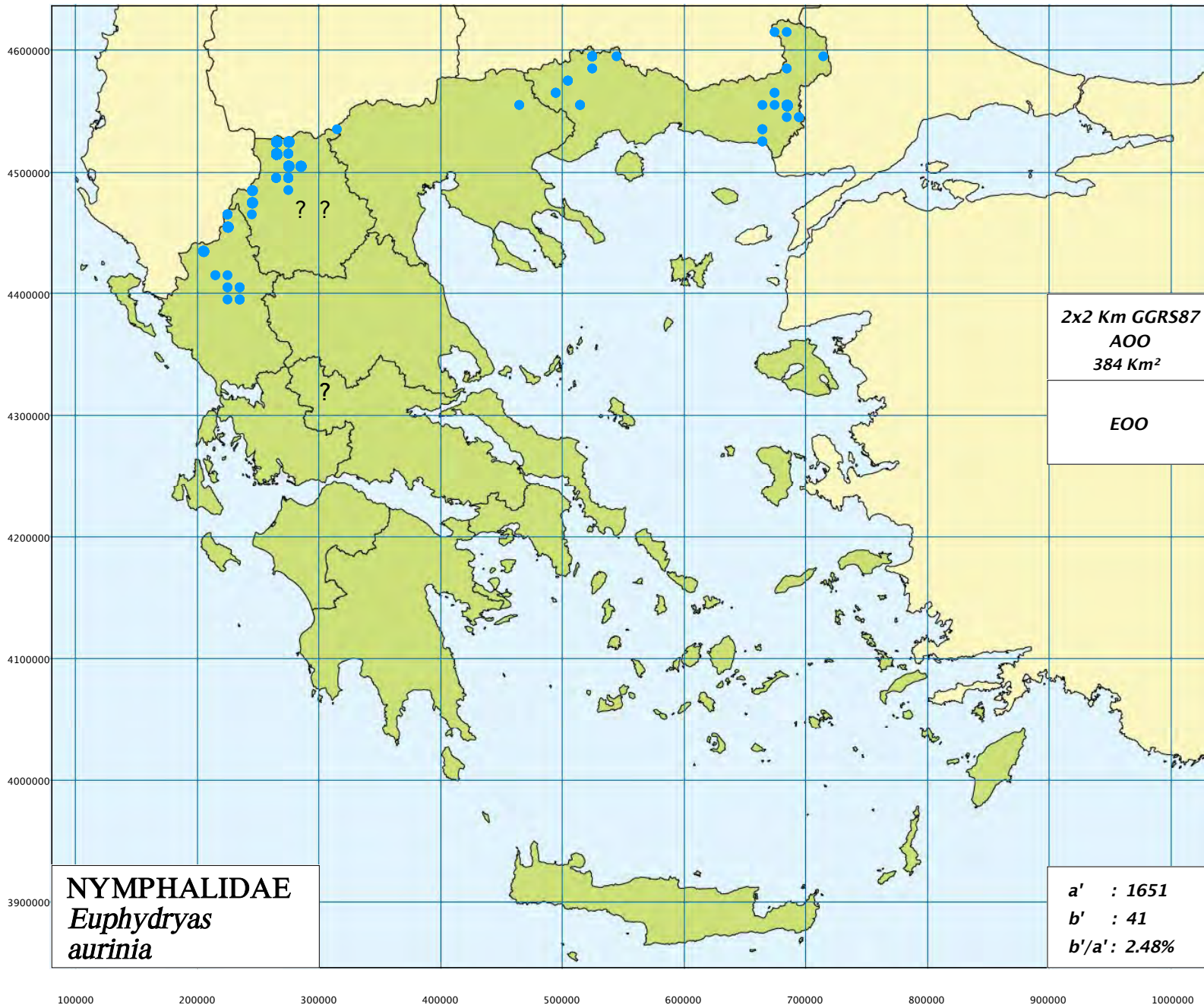


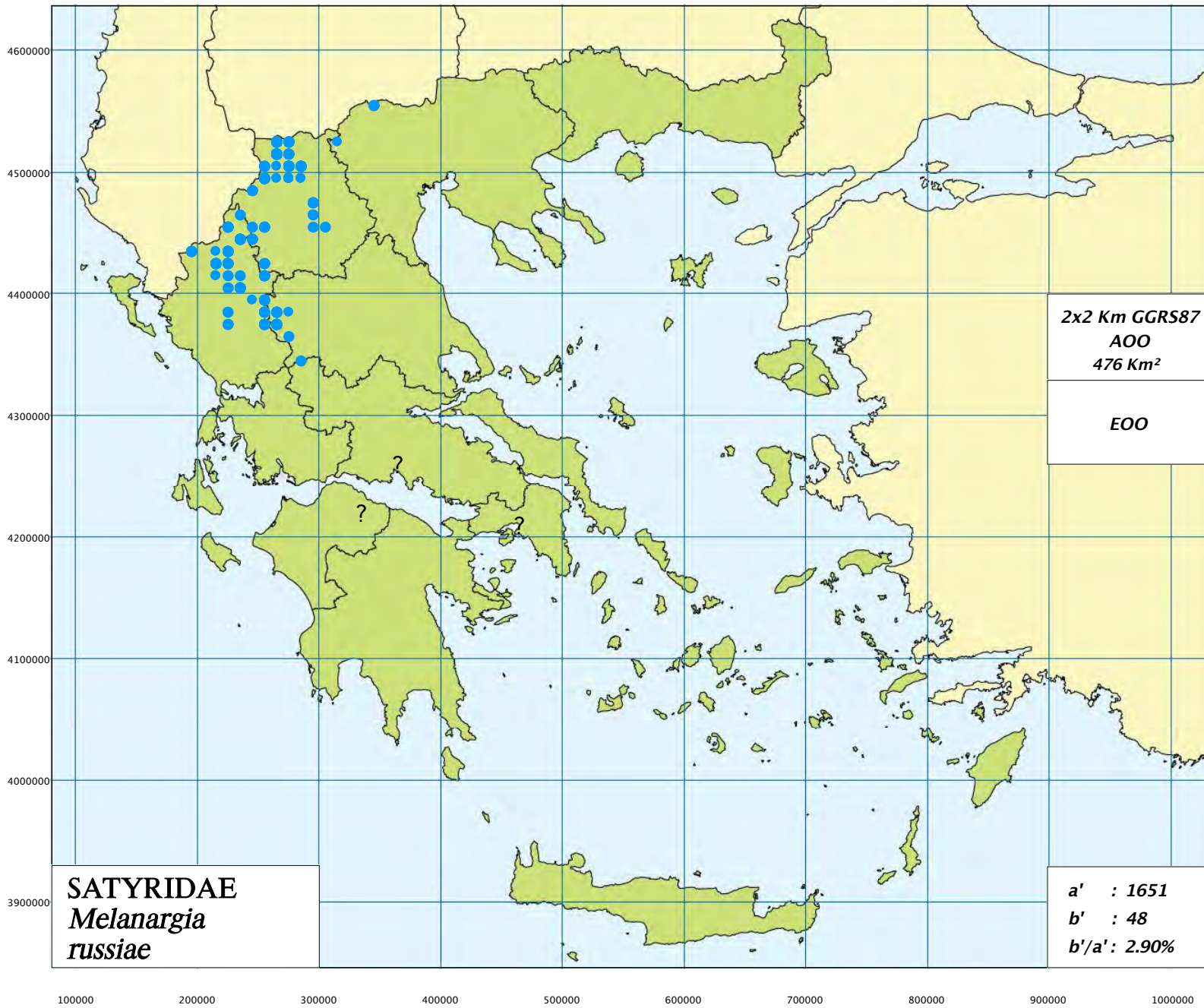
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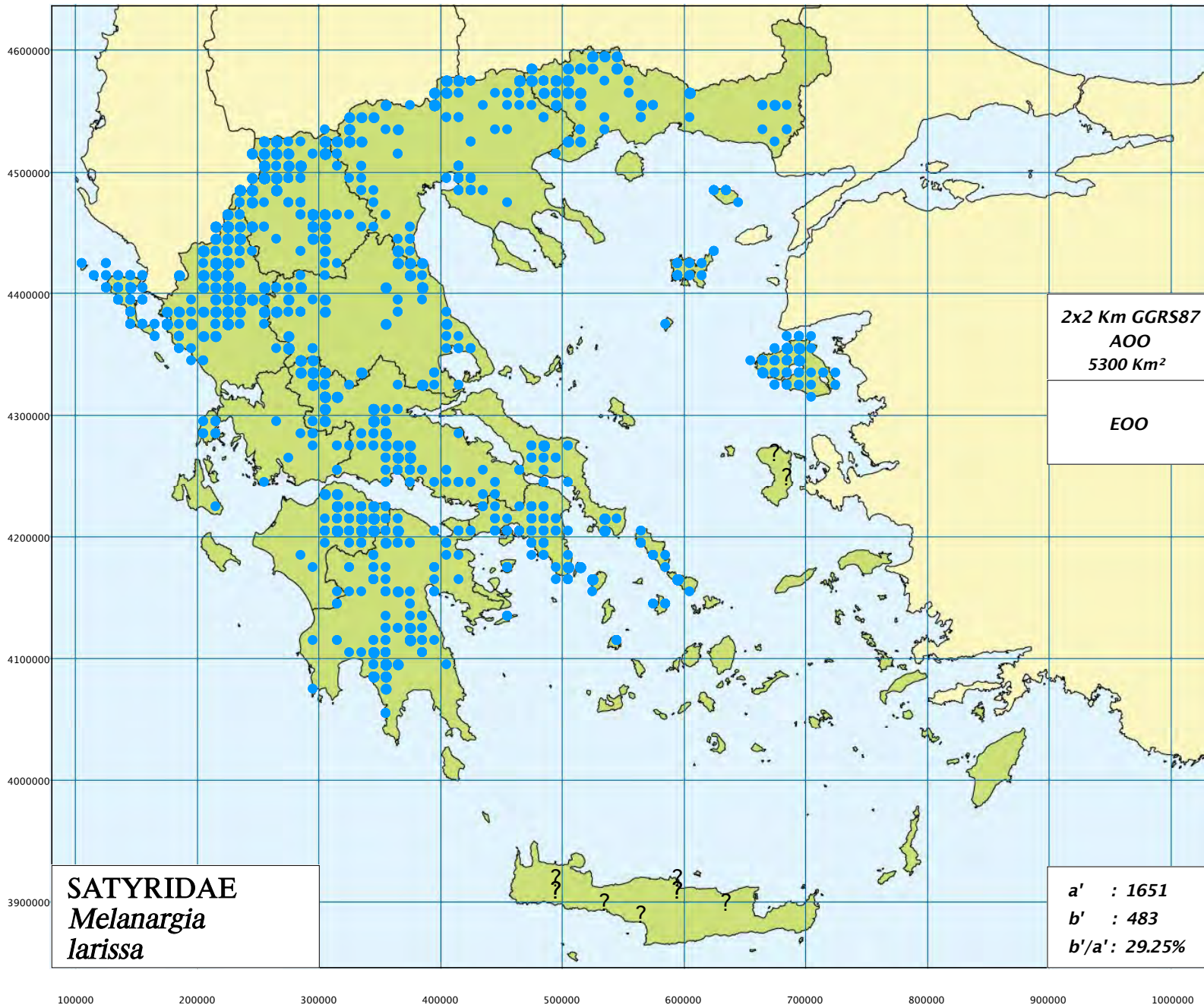
Αμφίβολη αναγνώριση /
Identification Uncertain

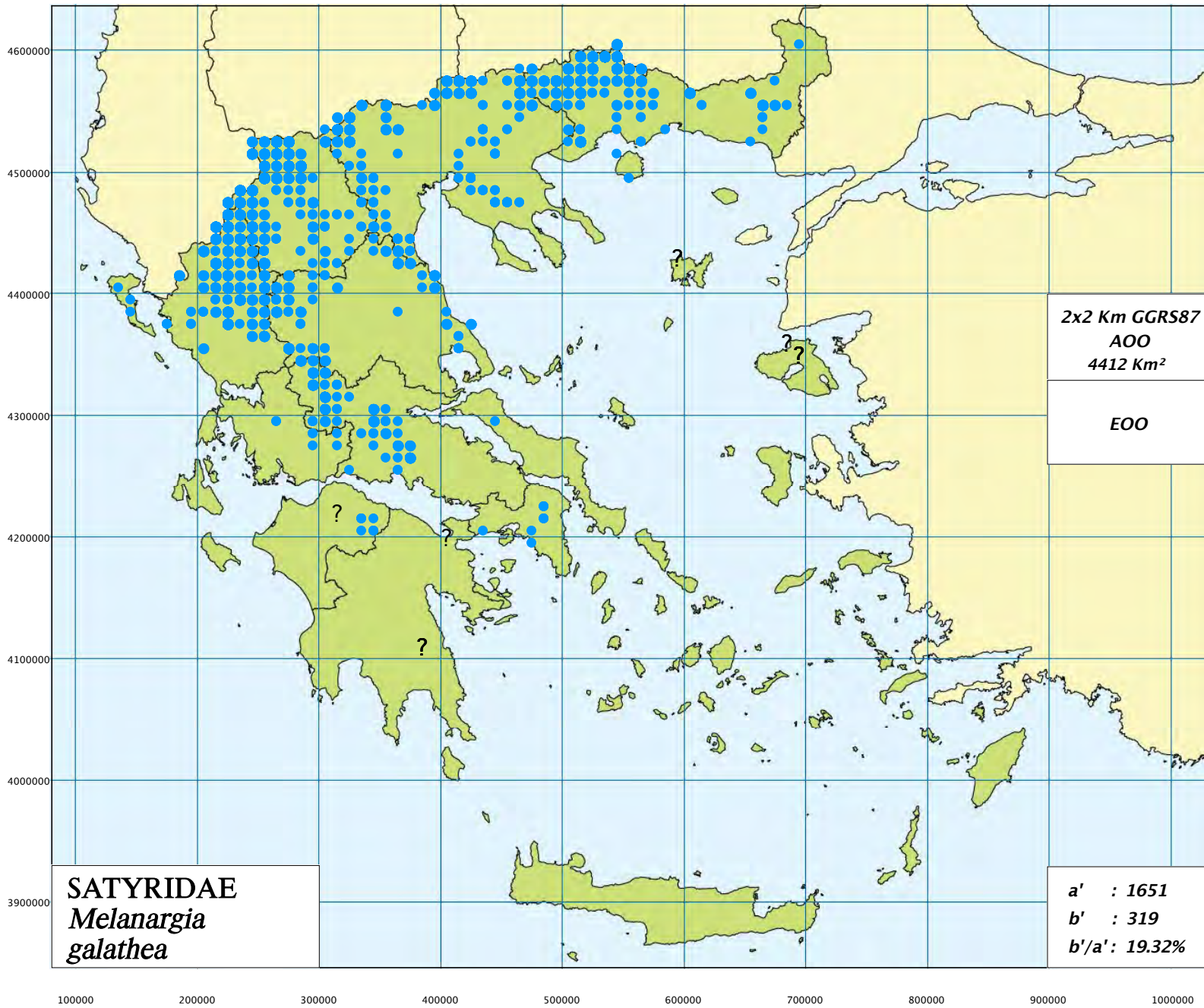


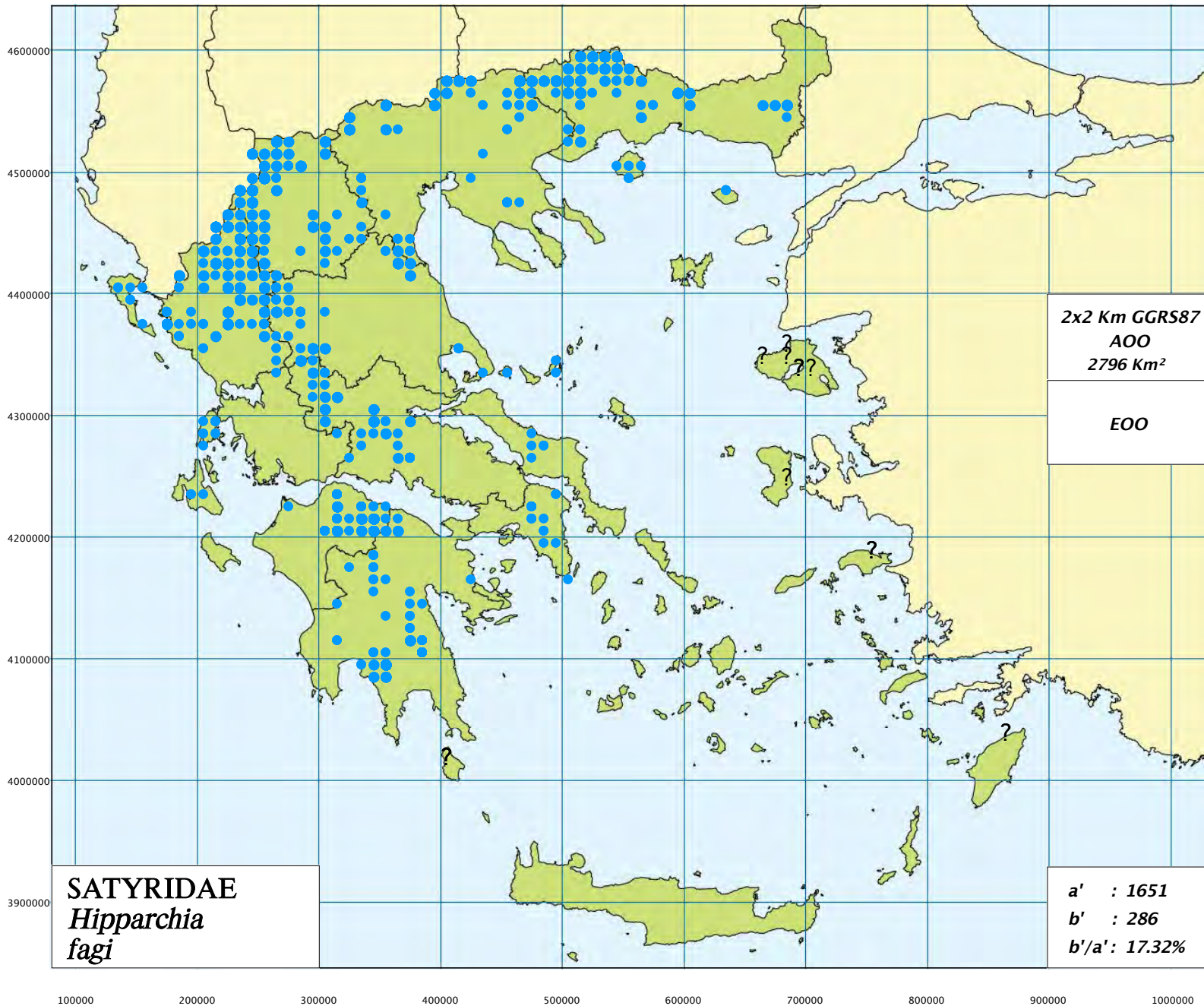
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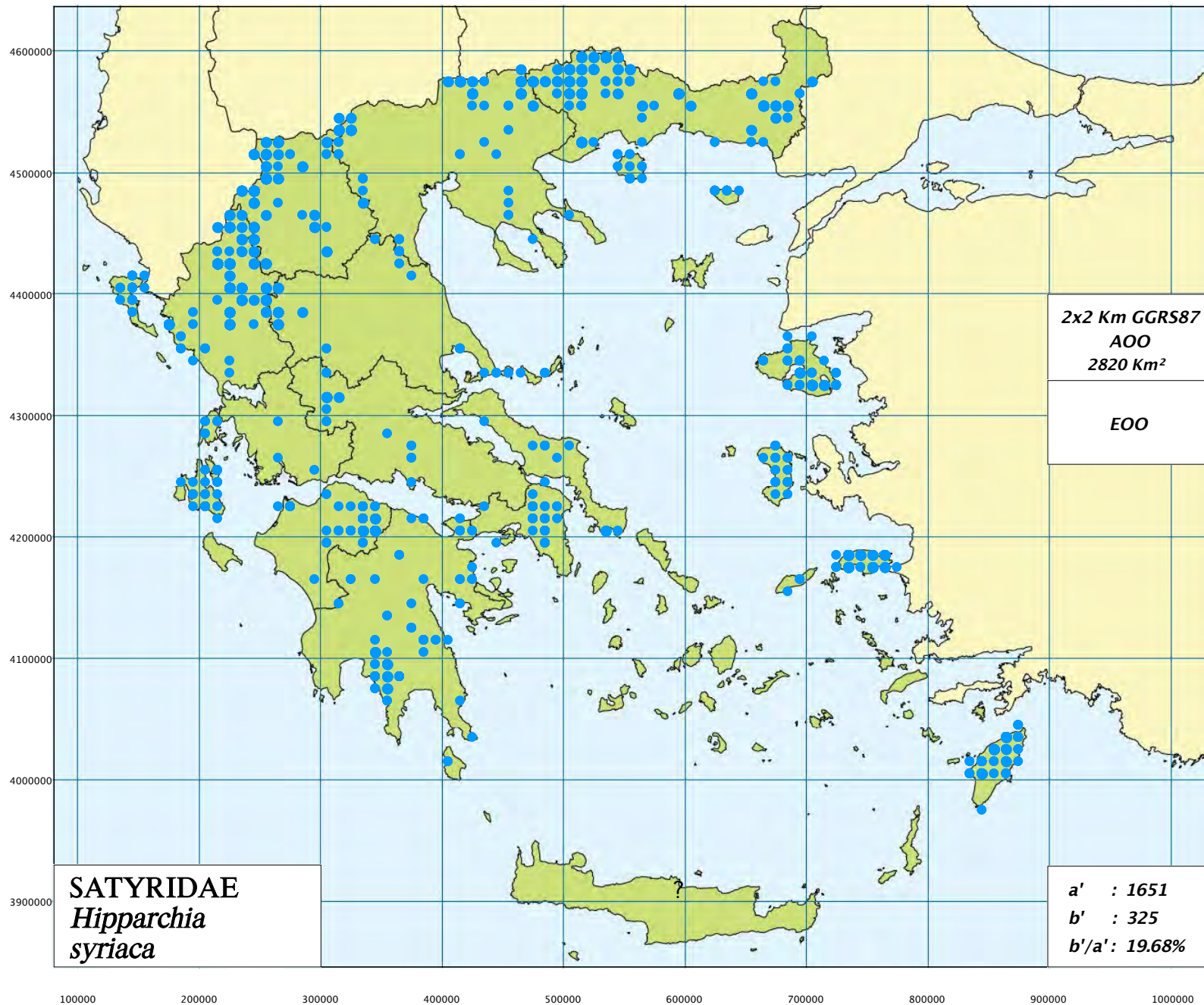






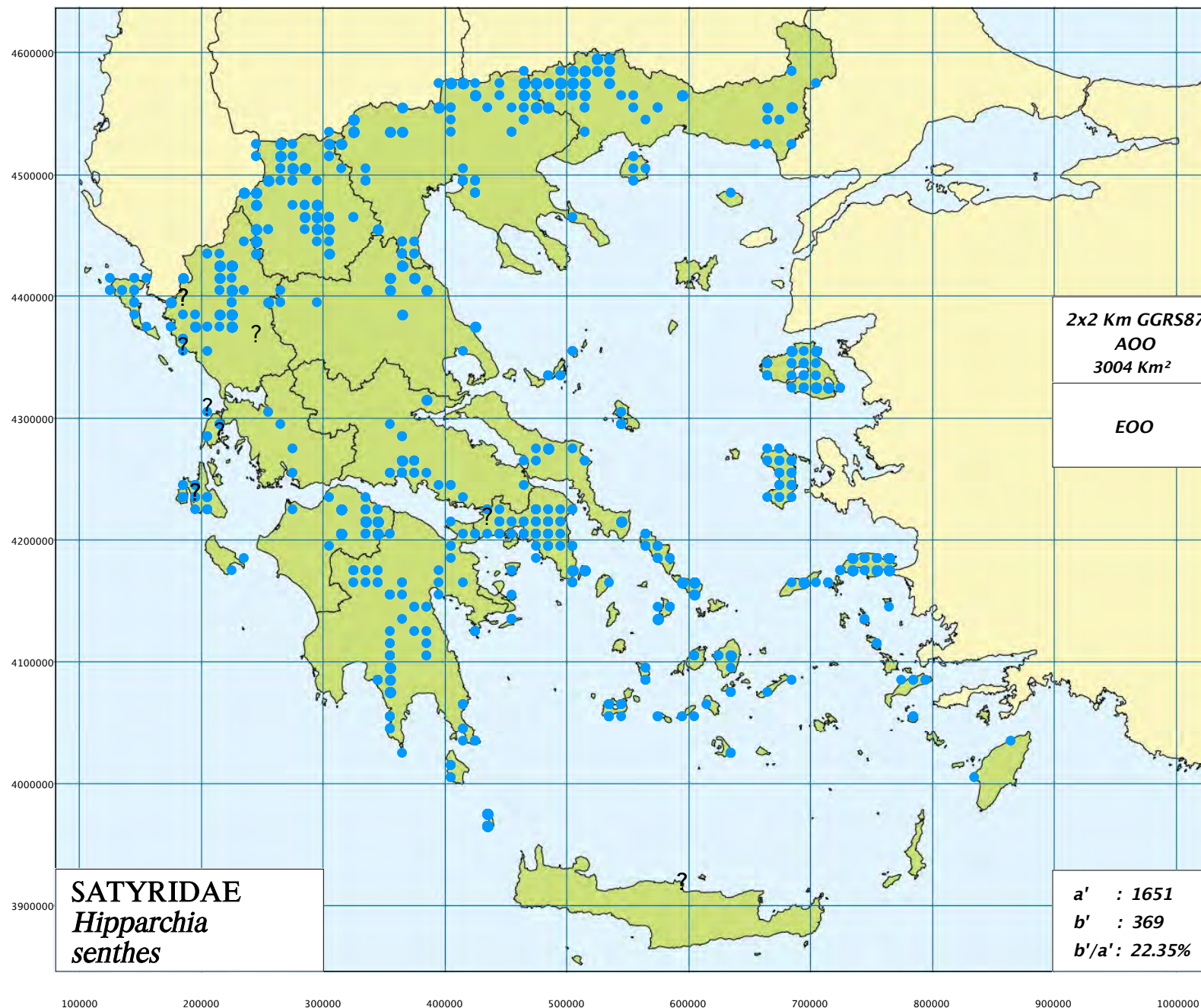






https://www.pamperis.gr/PHOTOGRAPHS/Hipparchia_fagi_syriaca_complex.html

Αμφίβολη αναγνώριση /
Identification Uncertain



https://www.pamperis.gr/PHOTOGRAPHS/Hipparchia_senthes_volgensis_cretica_christenseni_mersina_complex.html

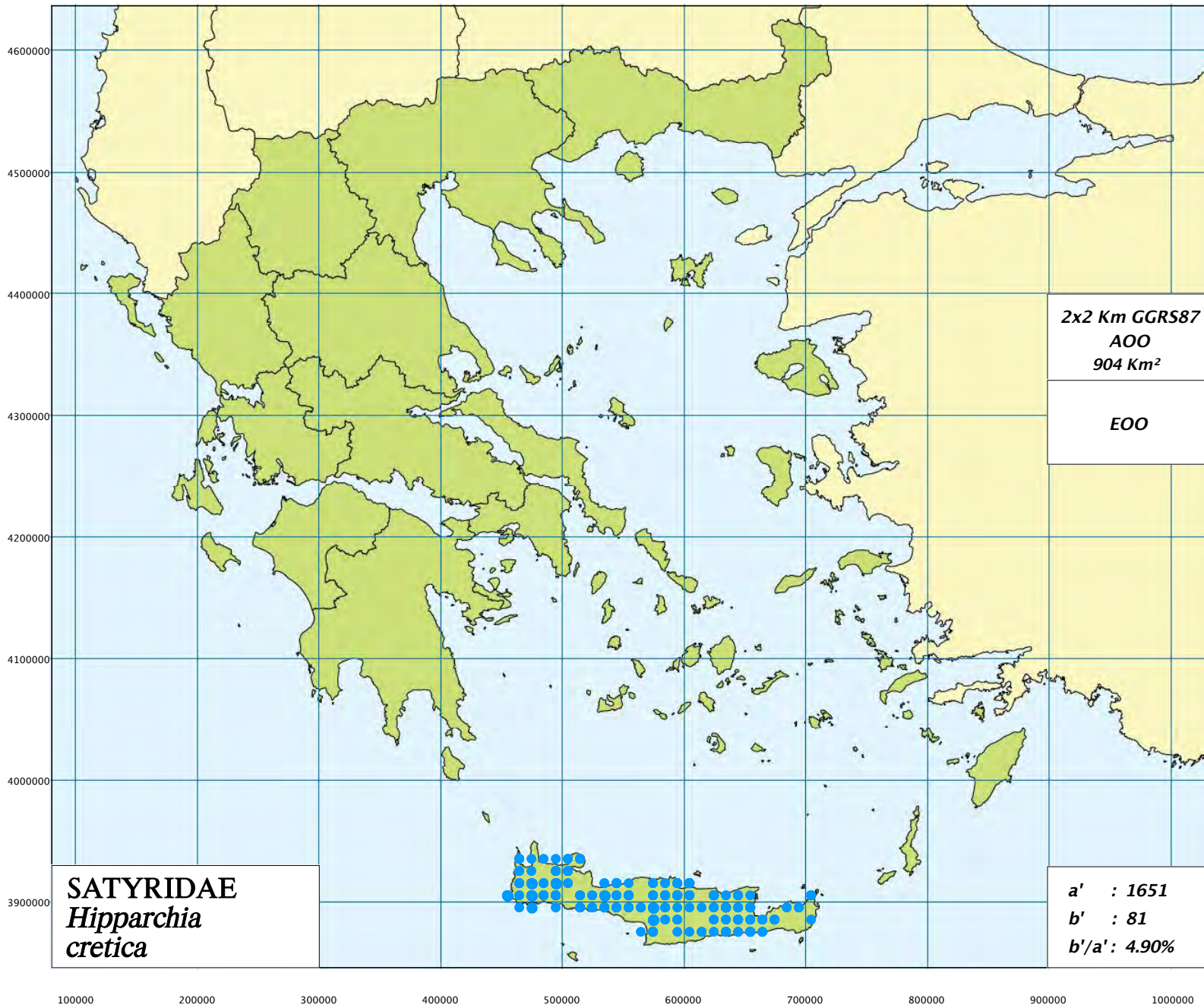


Αμφίβολη αναγνώριση /
Identification Uncertain

All records of *Hipparchia pellucida*, which is found that is not present in Greece (see in COUTSIS J. G. & BOZANO G. C.: The true identity of butterflies originally recorded as *Hipparchia* (*Parahipparchia*) *pellucida* (Stauder, 1923) from the Eastern Aegean Greek islands of Lézvos and Ikaría (Lepidoptera: Nymphalidae, Satyrinae). *Phegea* 46(3): 106-109.) that is for some Islands of eastern Aegean (Lesvos, Icaria, Chios and Samos) are included temporarily in this Map of *Hipparchia volgensis*, as records of *Hipparchia volgensis*.

Όλες οι αναφορές για το *Hipparchia pellucida*, το οποίο βρέθηκε ότι δεν υπάρχει στην Ελλάδα (δες στο COUTSIS J. G. & BOZANO G. C.: The true identity of butterflies originally recorded as *Hipparchia* (*Parahipparchia*) *pellucida* (Stauder, 1923) from the Eastern Aegean Greek islands of Lézvos and Ikaría (Lepidoptera: Nymphalidae, Satyrinae). *Phegea* 46(3): 106-109.) δηλαδή για κάποια νησιά του Ανατολικού Αιγαίου (Λέσβος, Ικαρία, Χίος και Σάμος) έχουν συμπεριληφθεί προσωρινά σε αυτό τον χάρτη για το *Hipparchia volgensis* σαν καταγραφές του *Hipparchia volgensis*.

ΕΝΔΗΜΙΚΟ ΕΙΔΟΣ ΤΗΣ ΕΛΛΑΔΑΣ
 ENDEMIC SPECIES OF GREECE



https://www.pamperis.gr/PHOTOGRAPHS/Hipparchia_sentes_volgensis_cretica_christenseni_mersina_complex.html

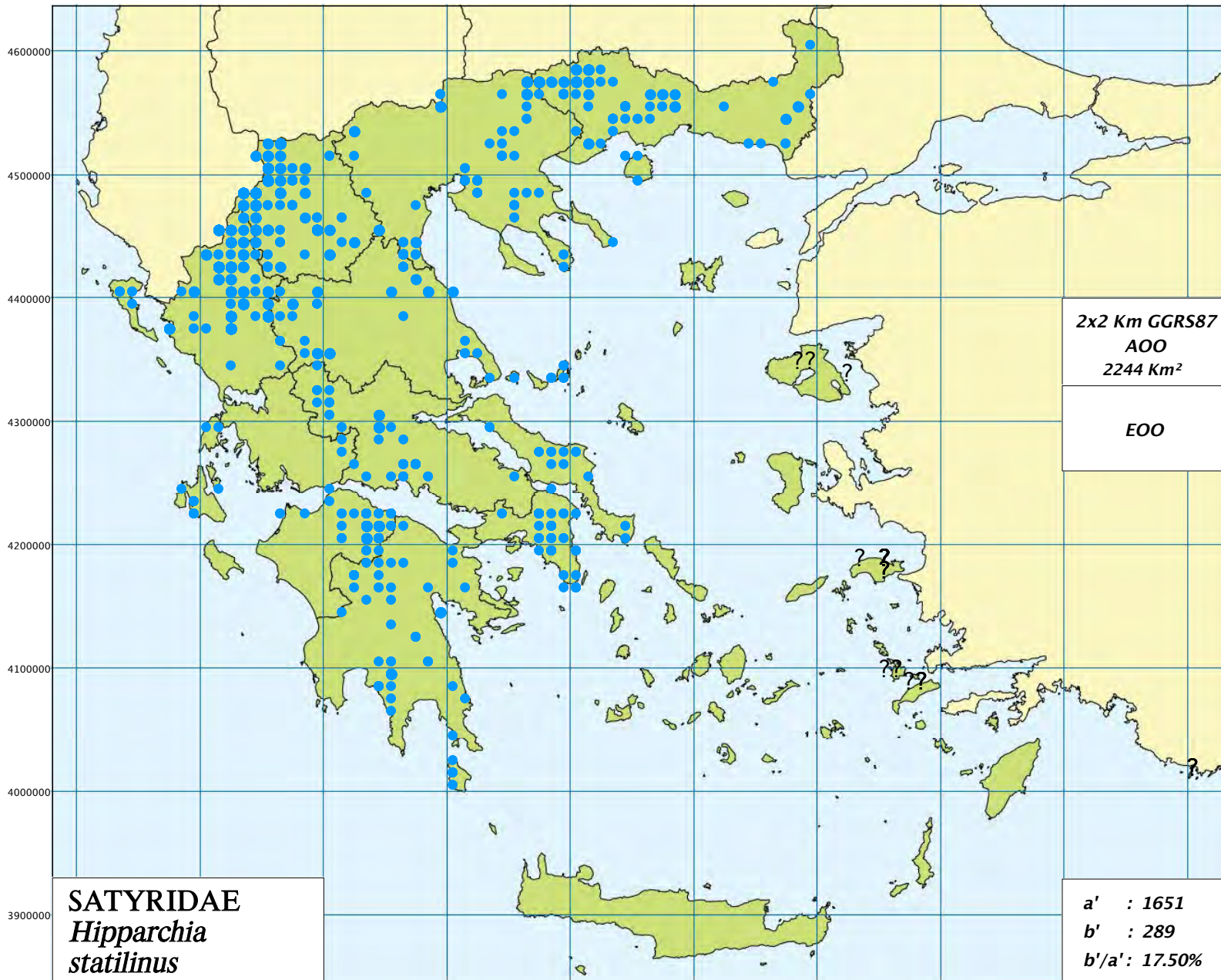
ÄI ° Æ Ç Ñ ' Ä Ç Ñ , ' Ö Æ , ' Ä² ² ¾ ¾
KT J KS Ø ' YVKI ØY'UL'VXKKI K



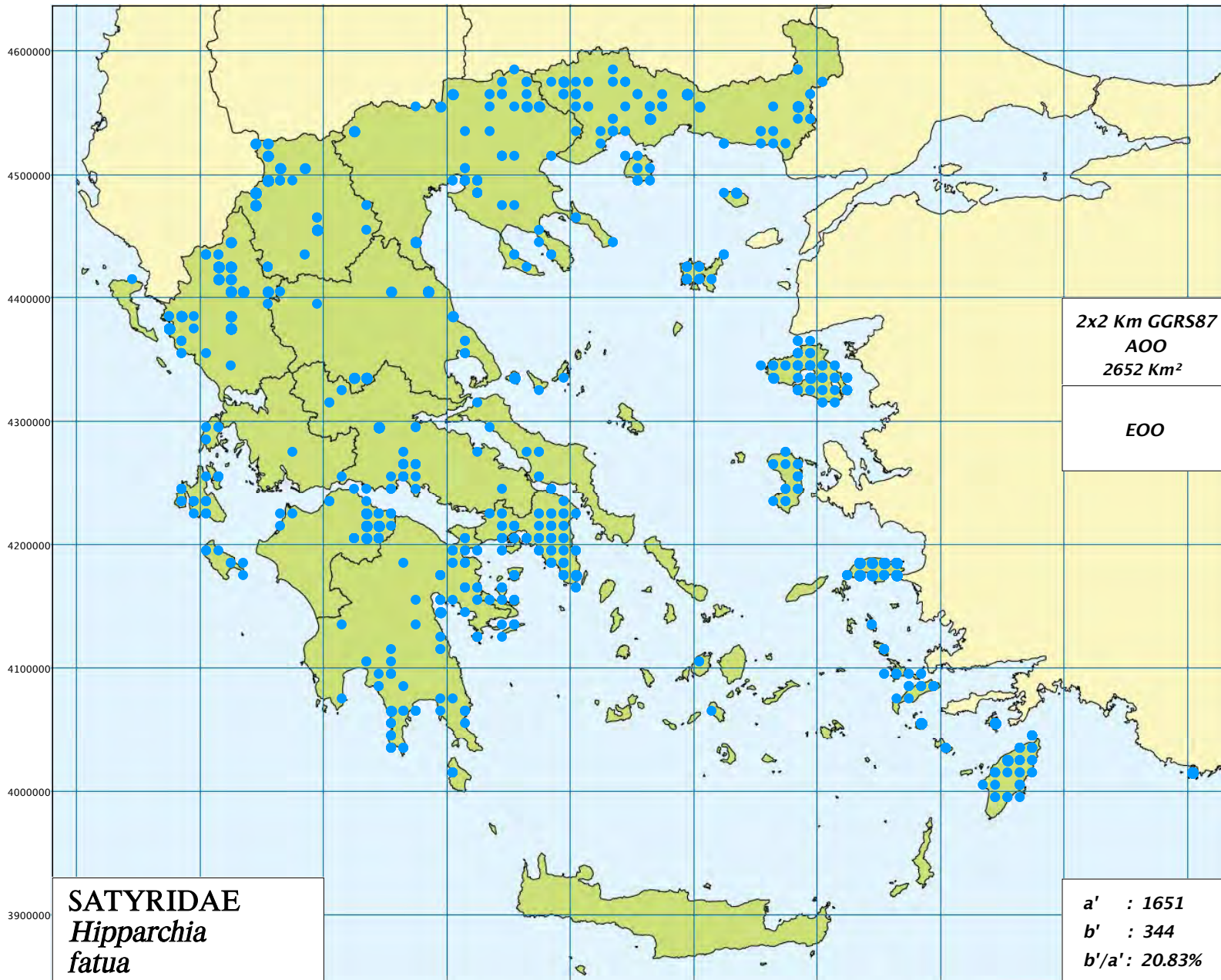
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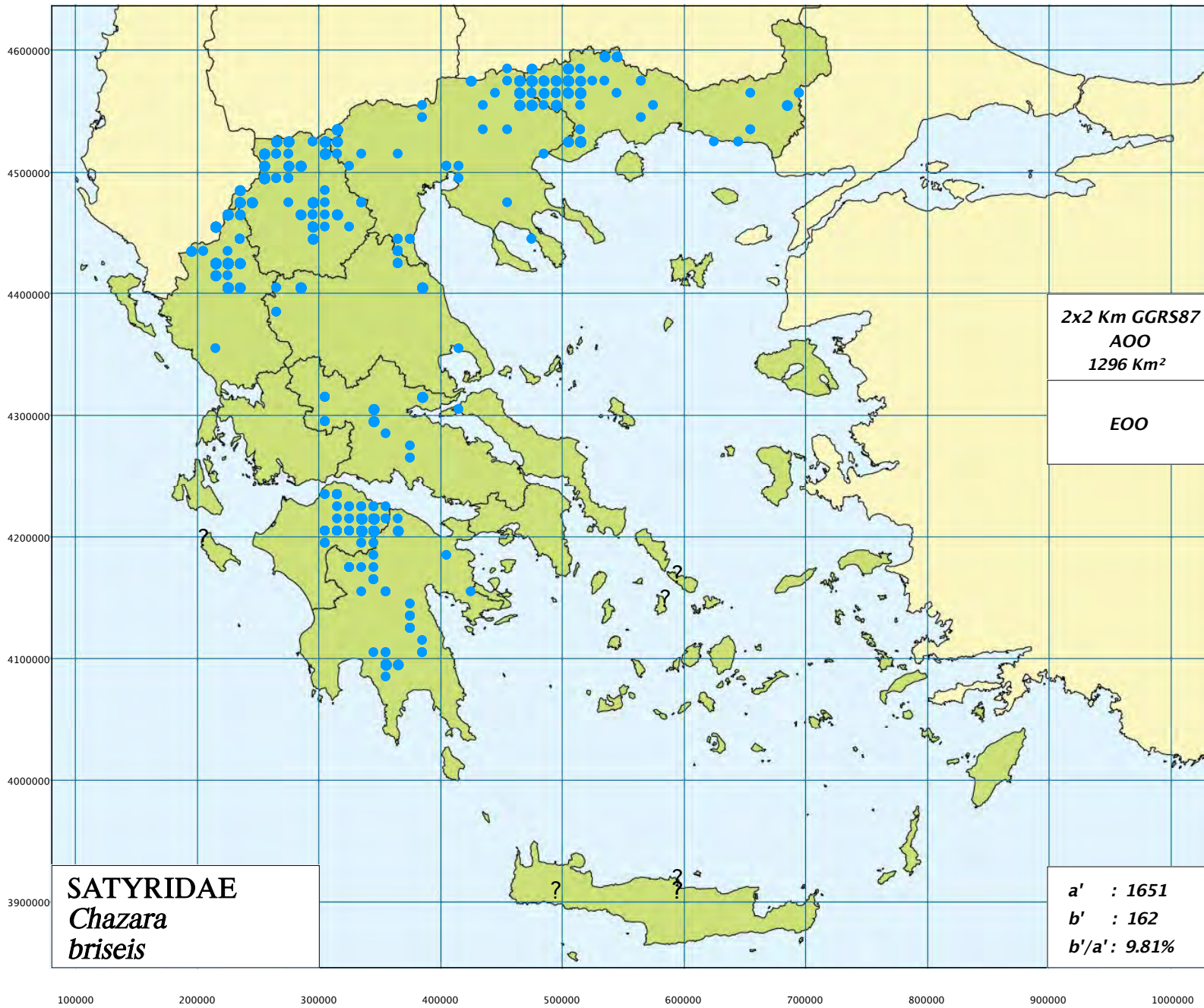


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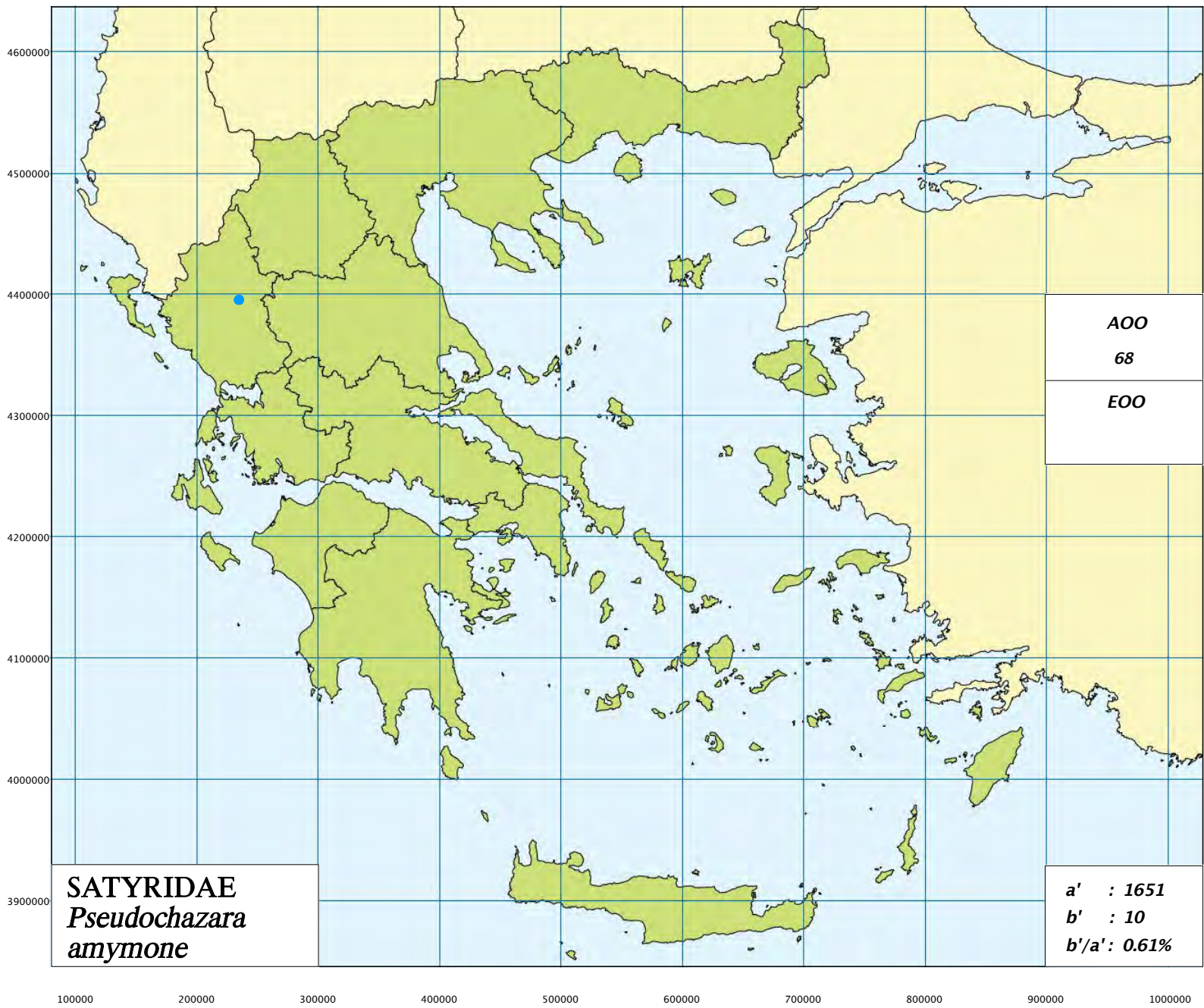




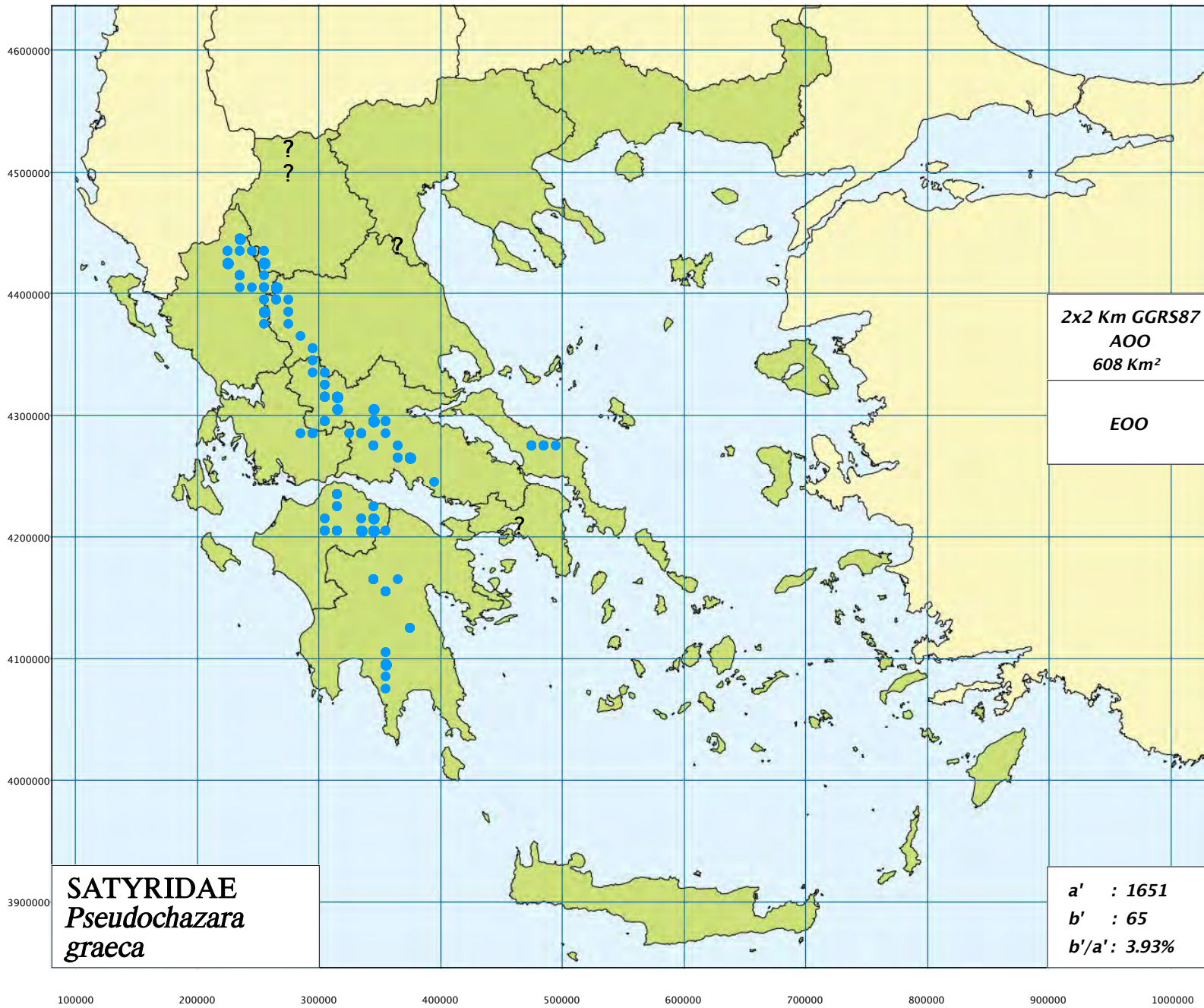
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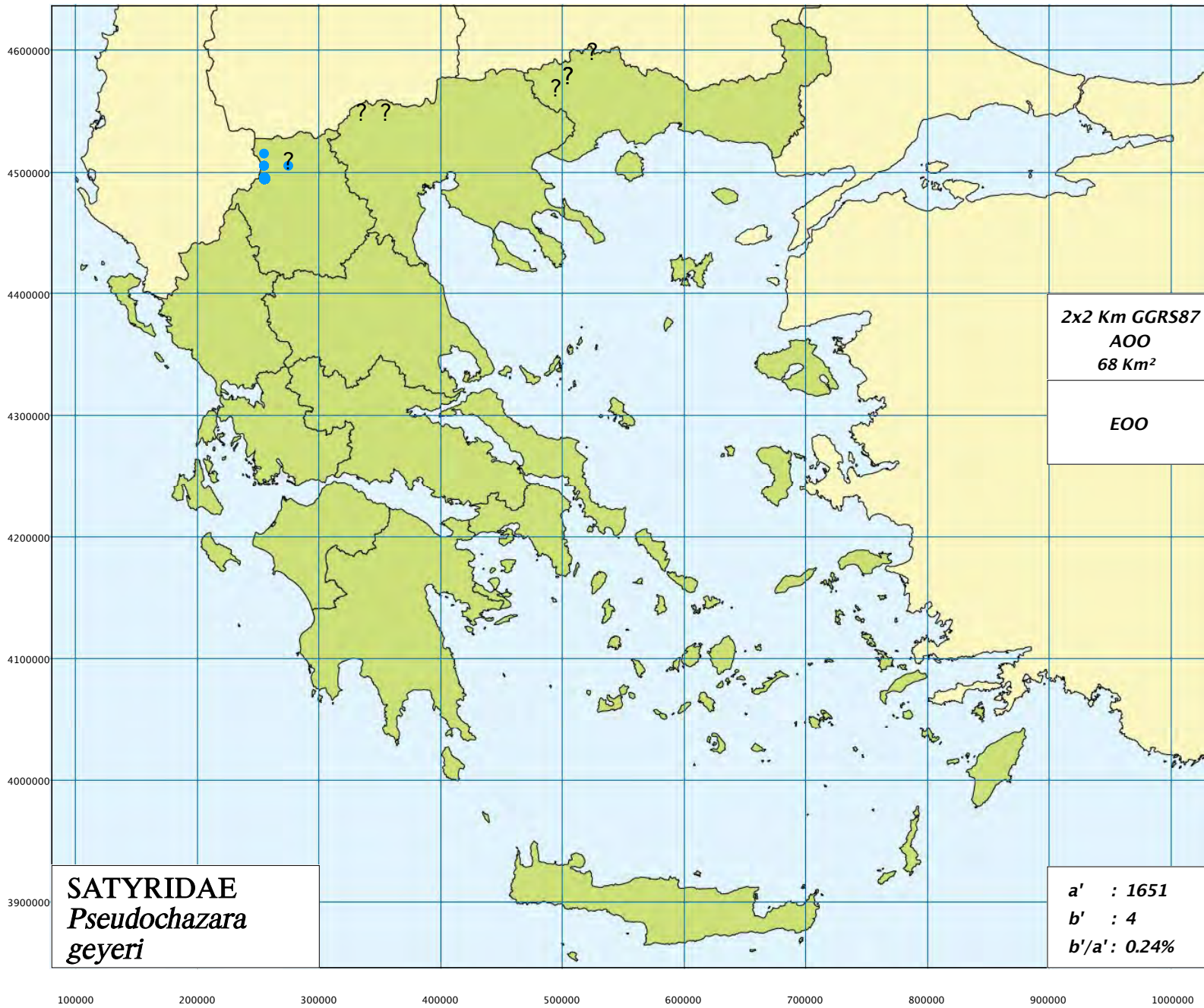
2x2 Km GGRS87
AOO
608 Km²

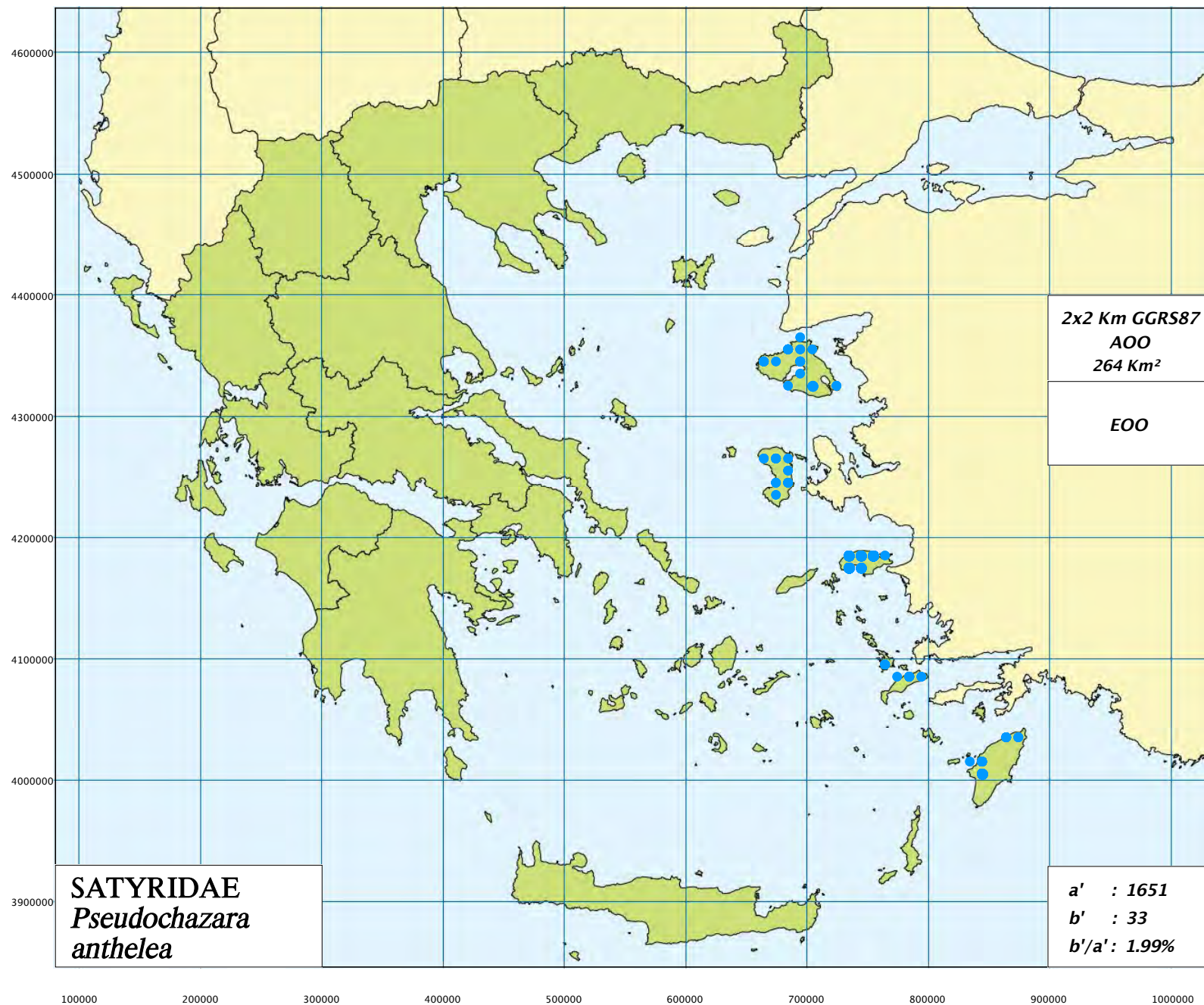
EOO

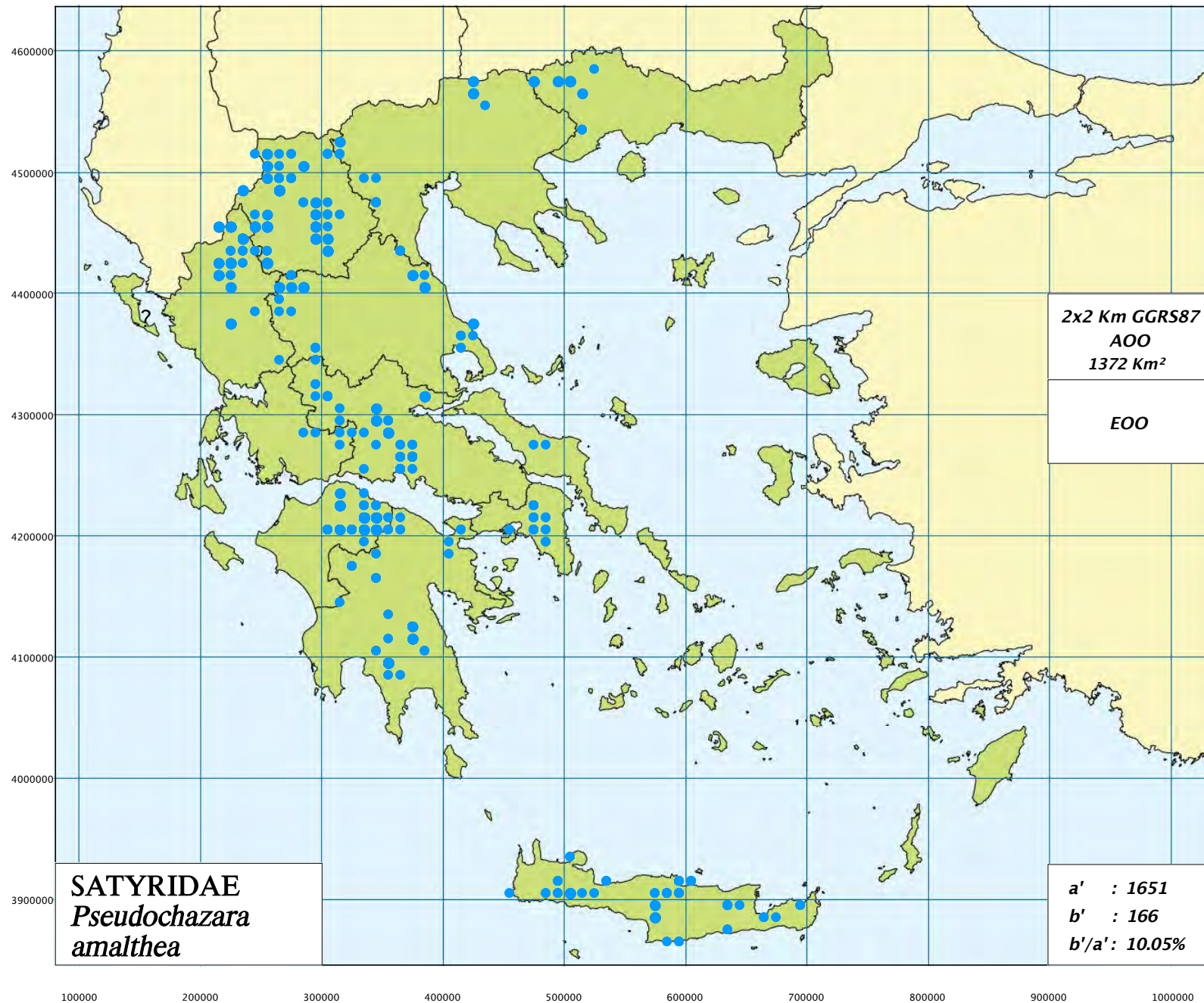
SATYRIDAE
Pseudochazara
graeca

a' : 1651
b' : 65
b'/a' : 3.93%

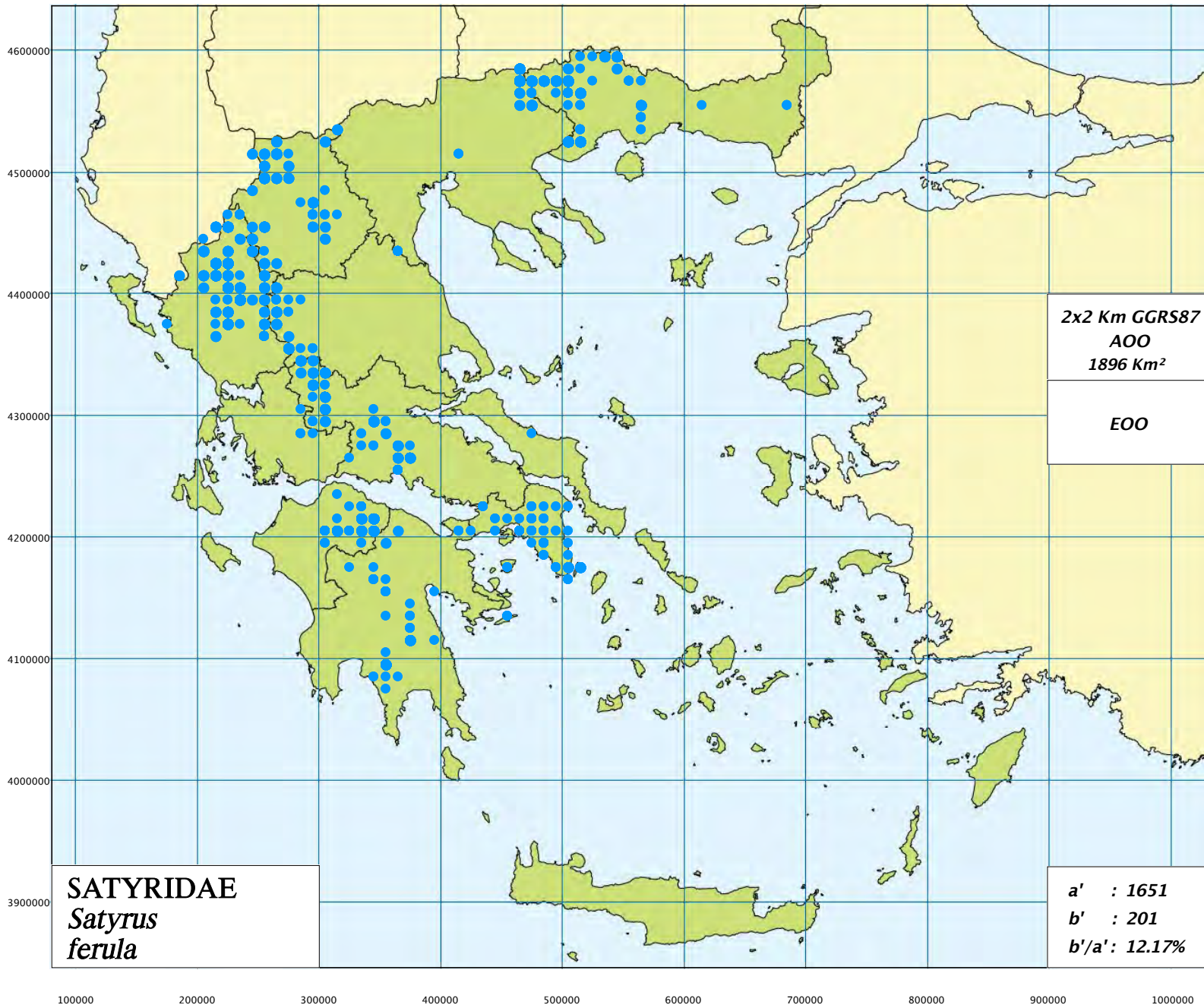
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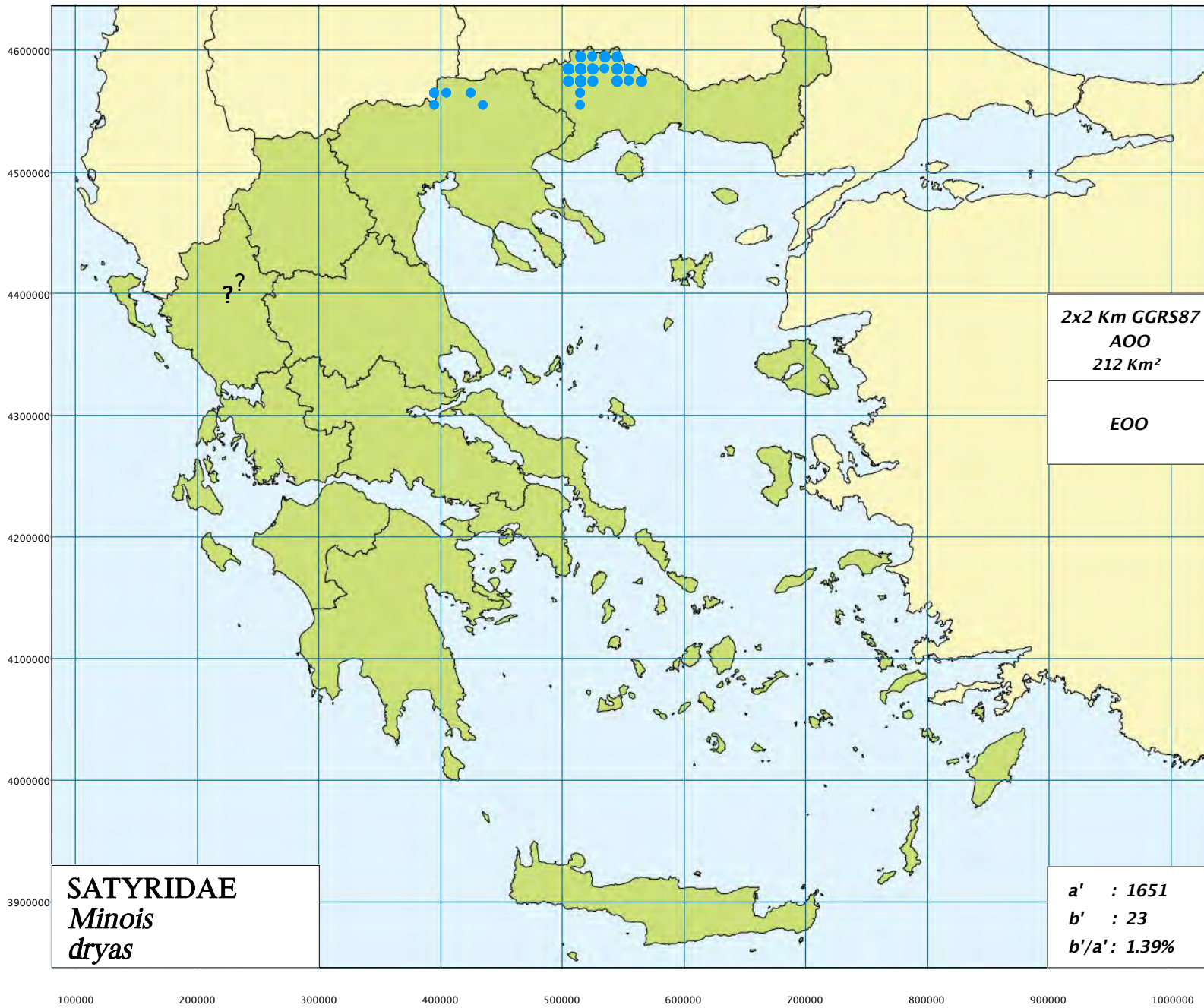


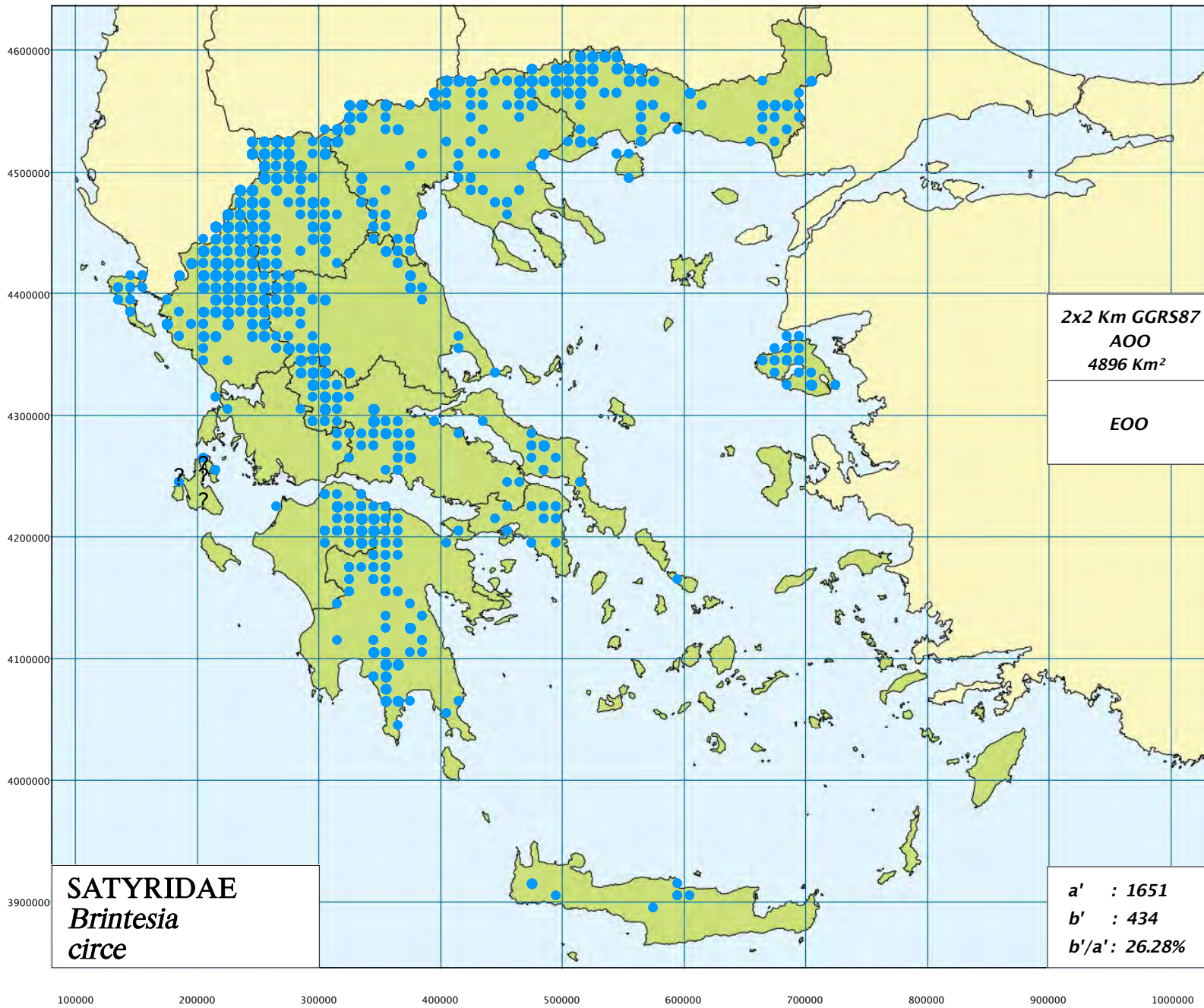


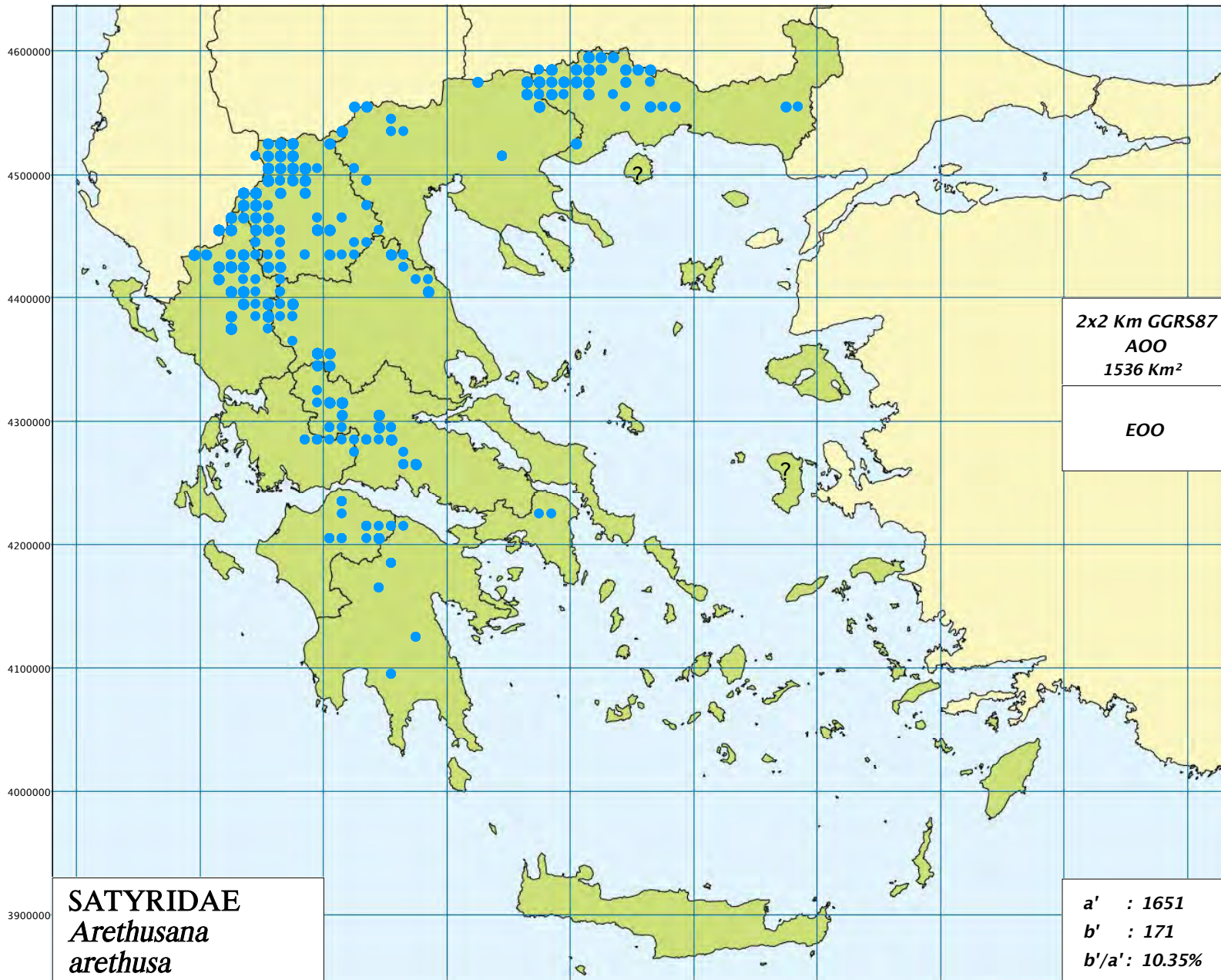


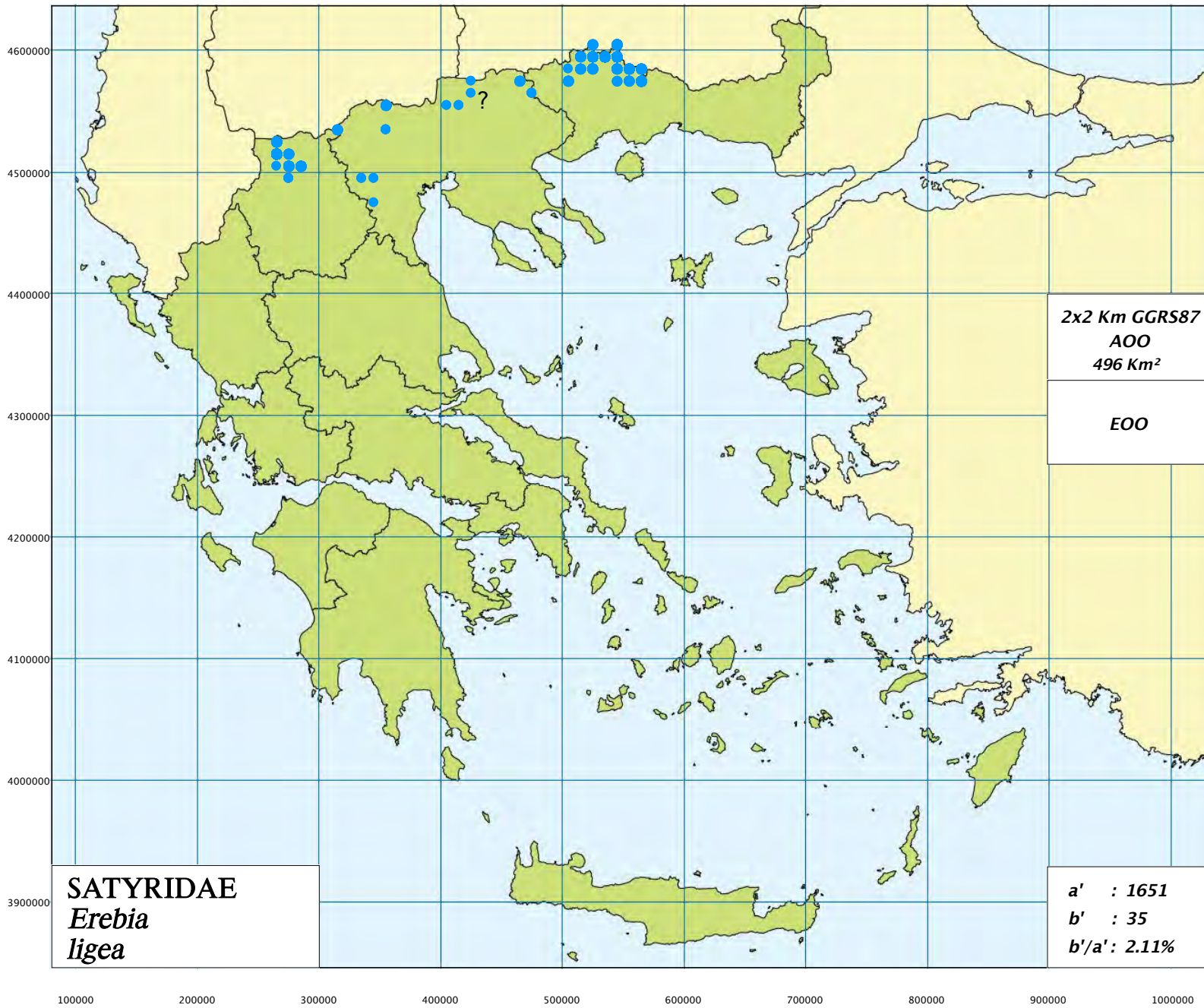
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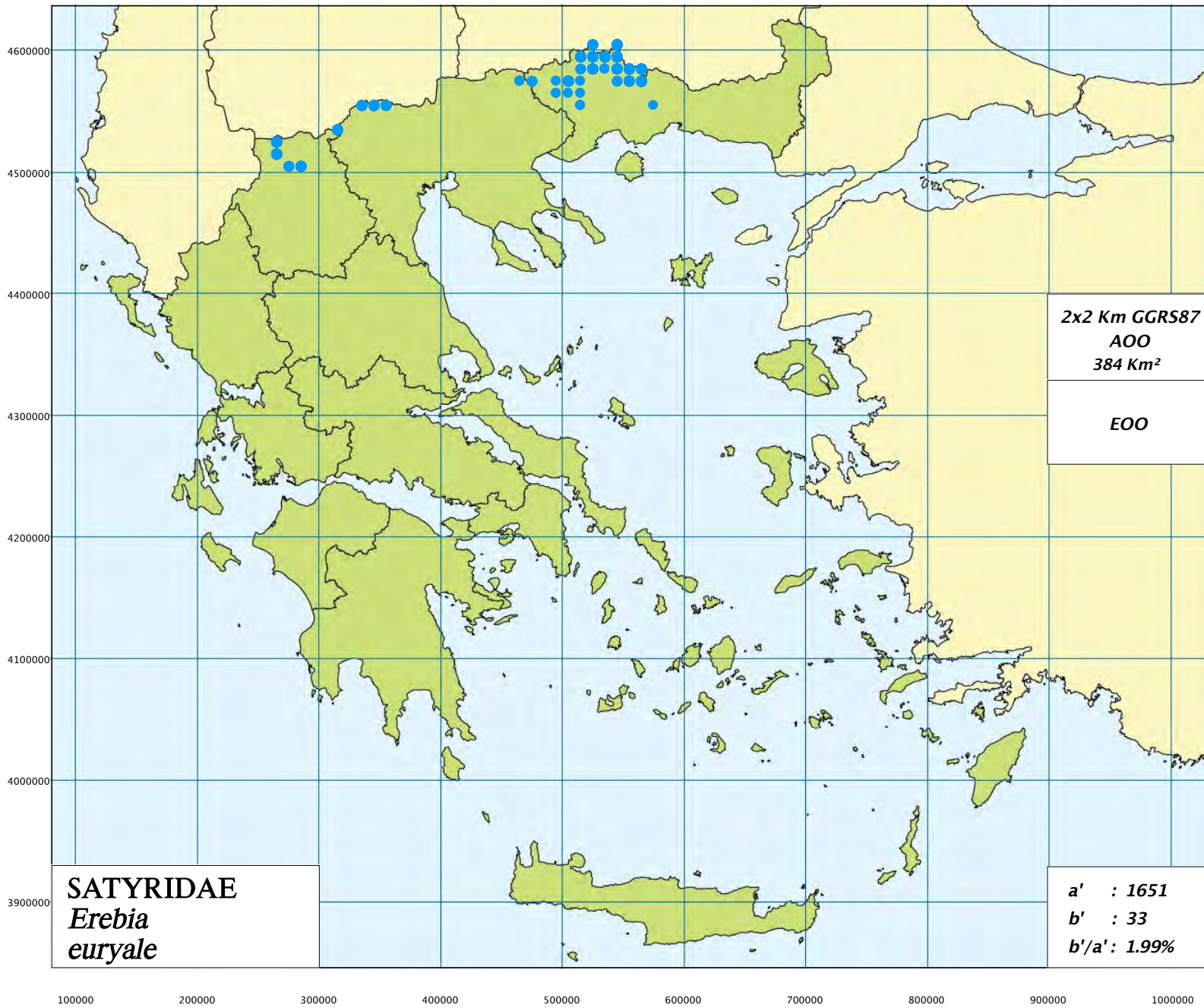




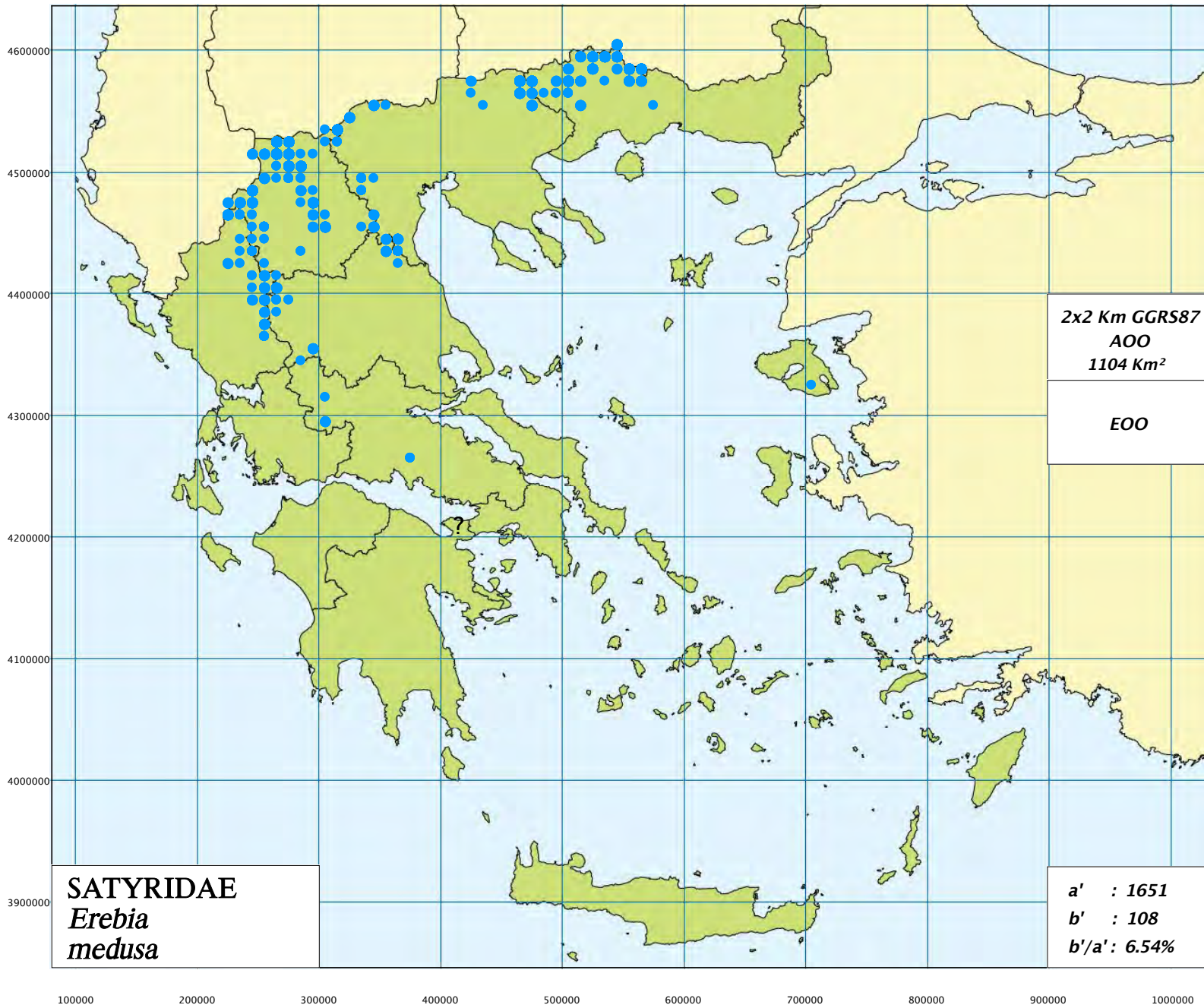




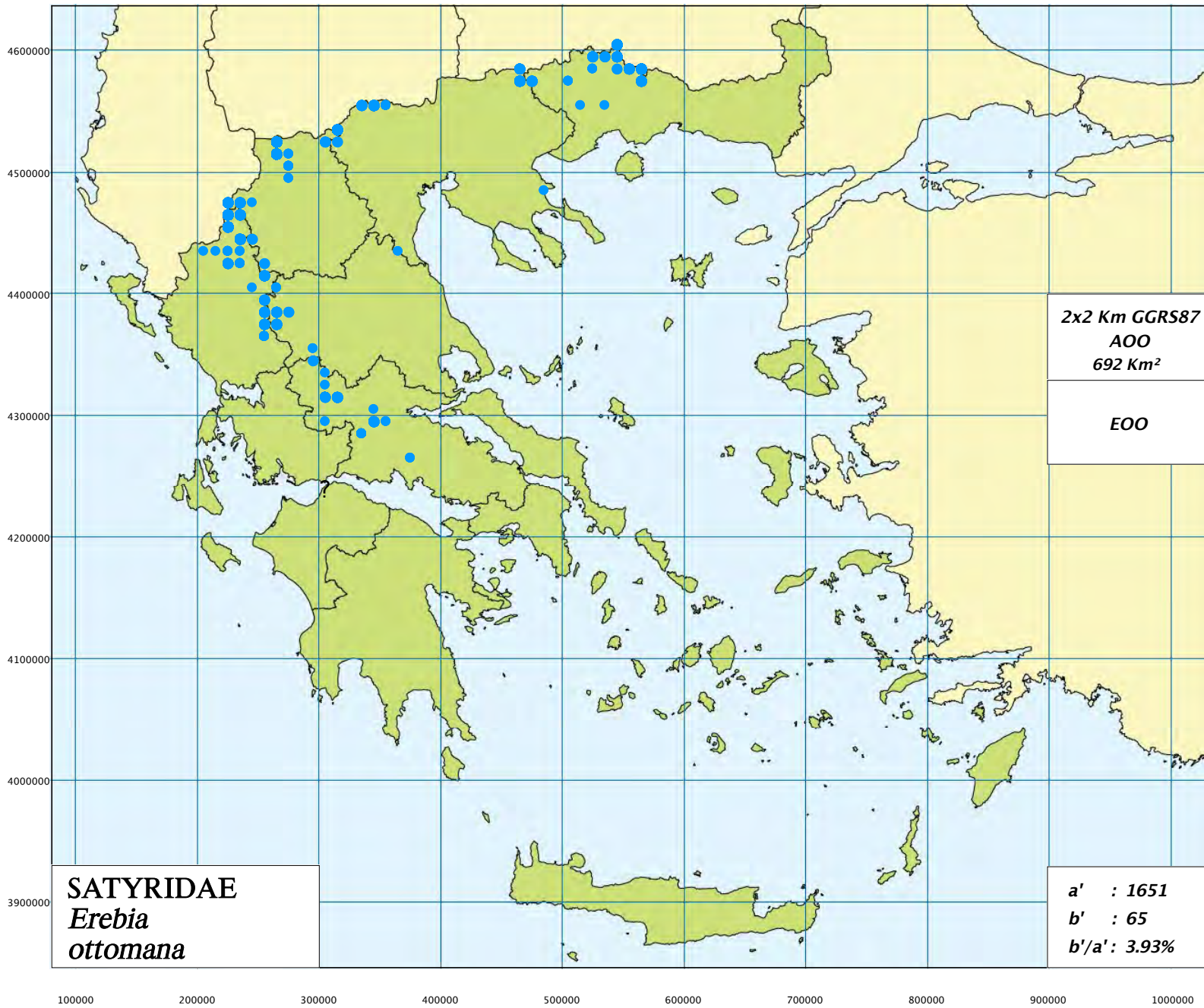














SATYRIDAE
Erebia
neleus

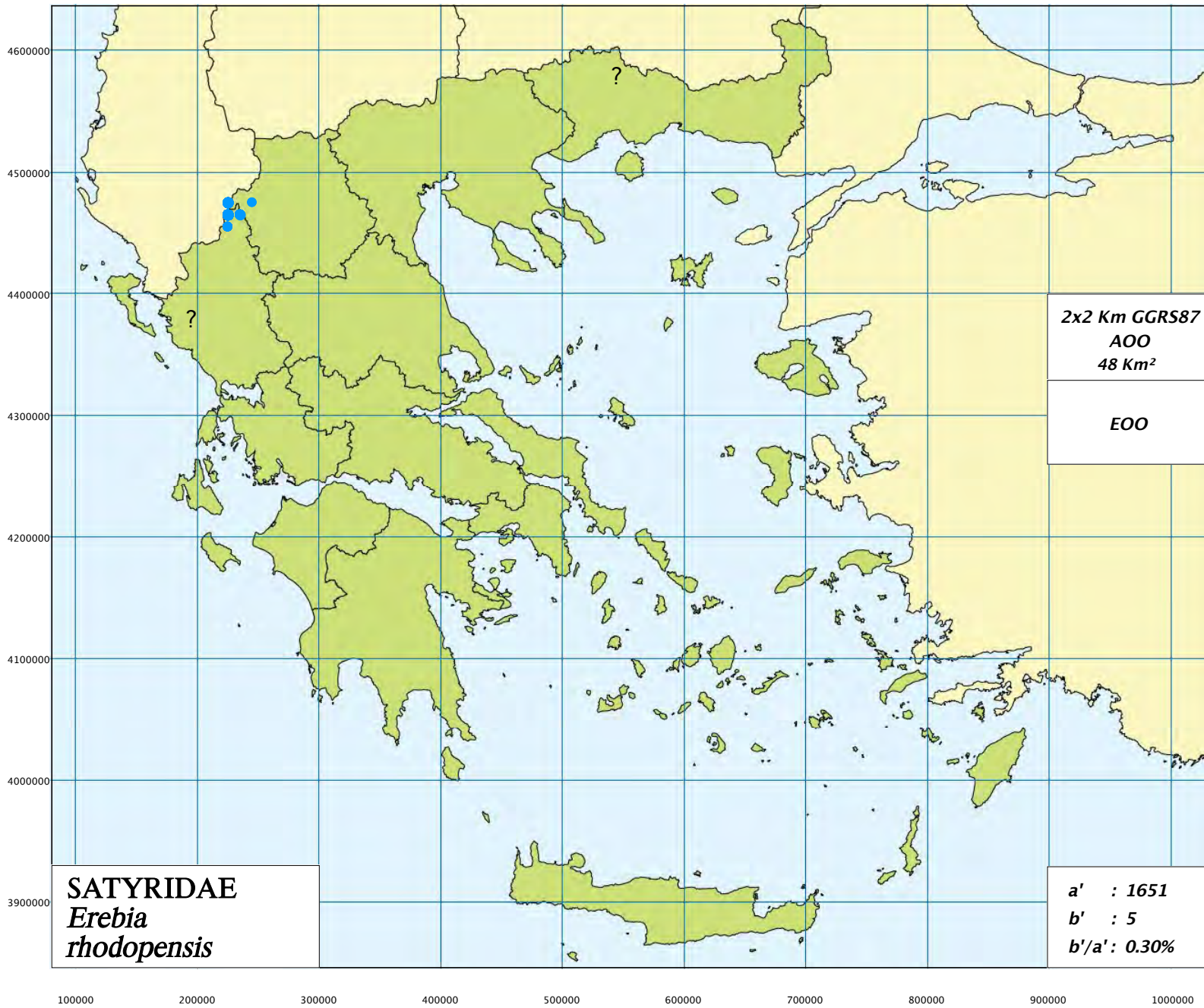
2x2 Km GGRS87
AOO
40 Km²

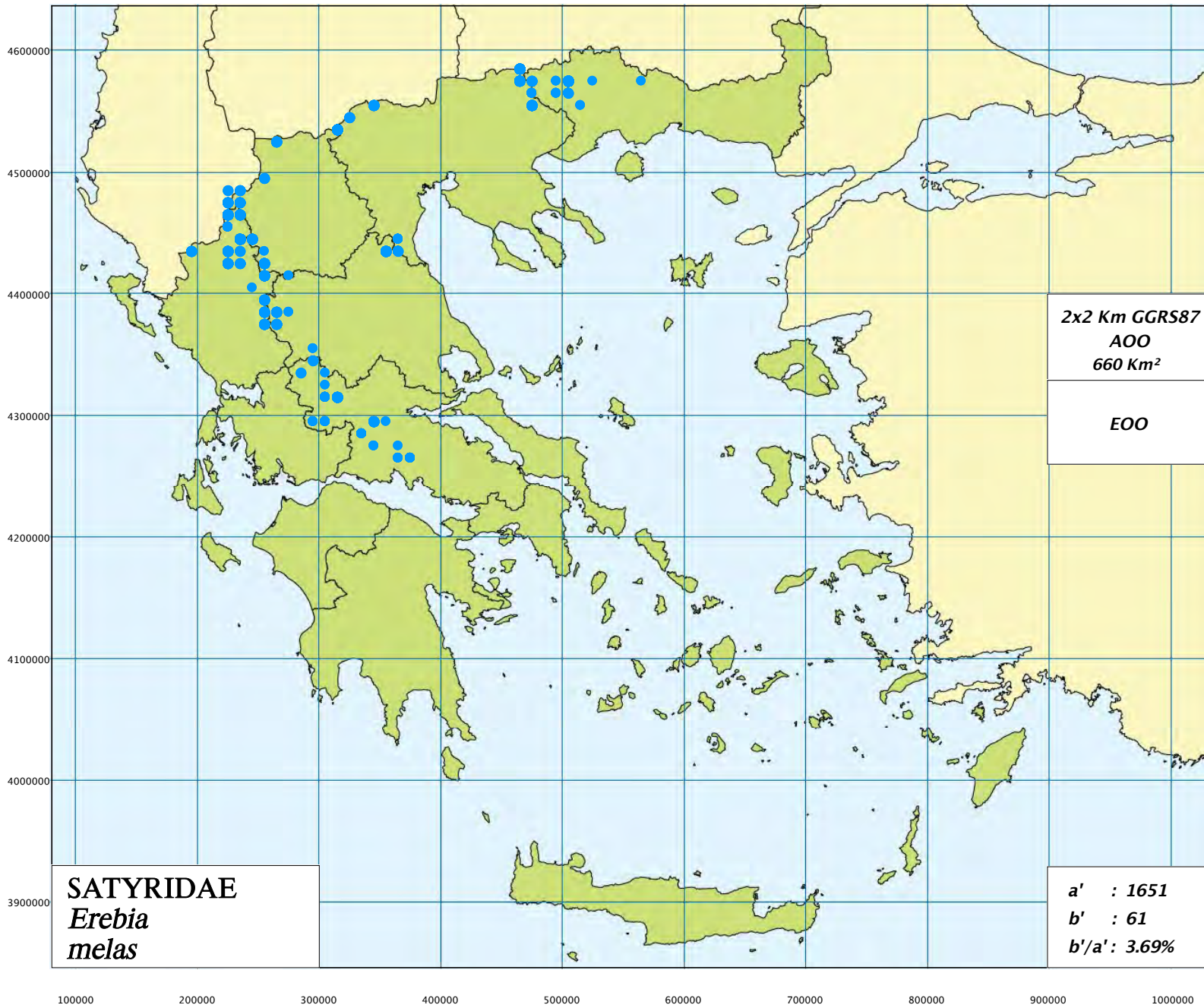
EOO

a' : 1651
b' : 3
b'/a' : 0.18%

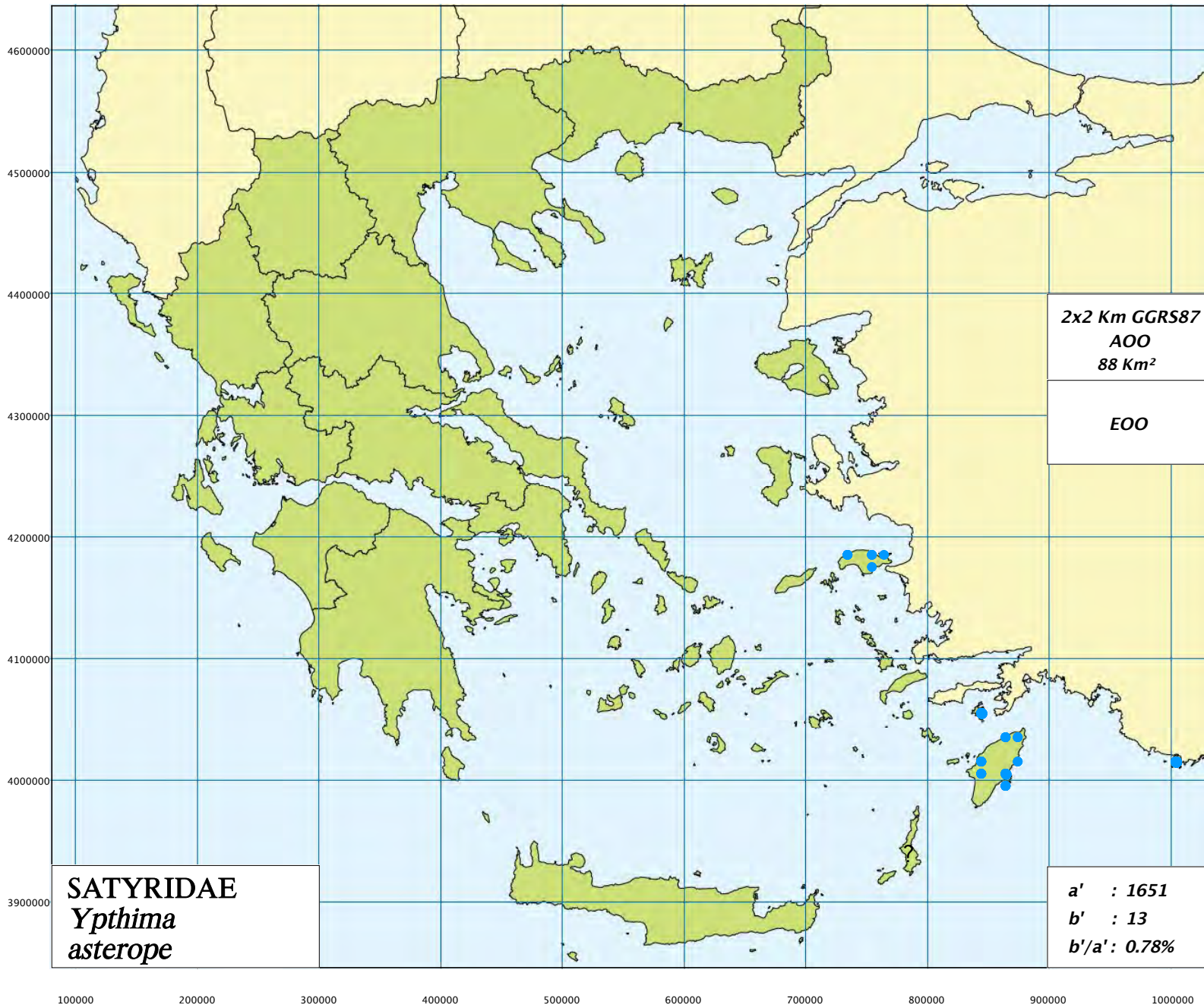
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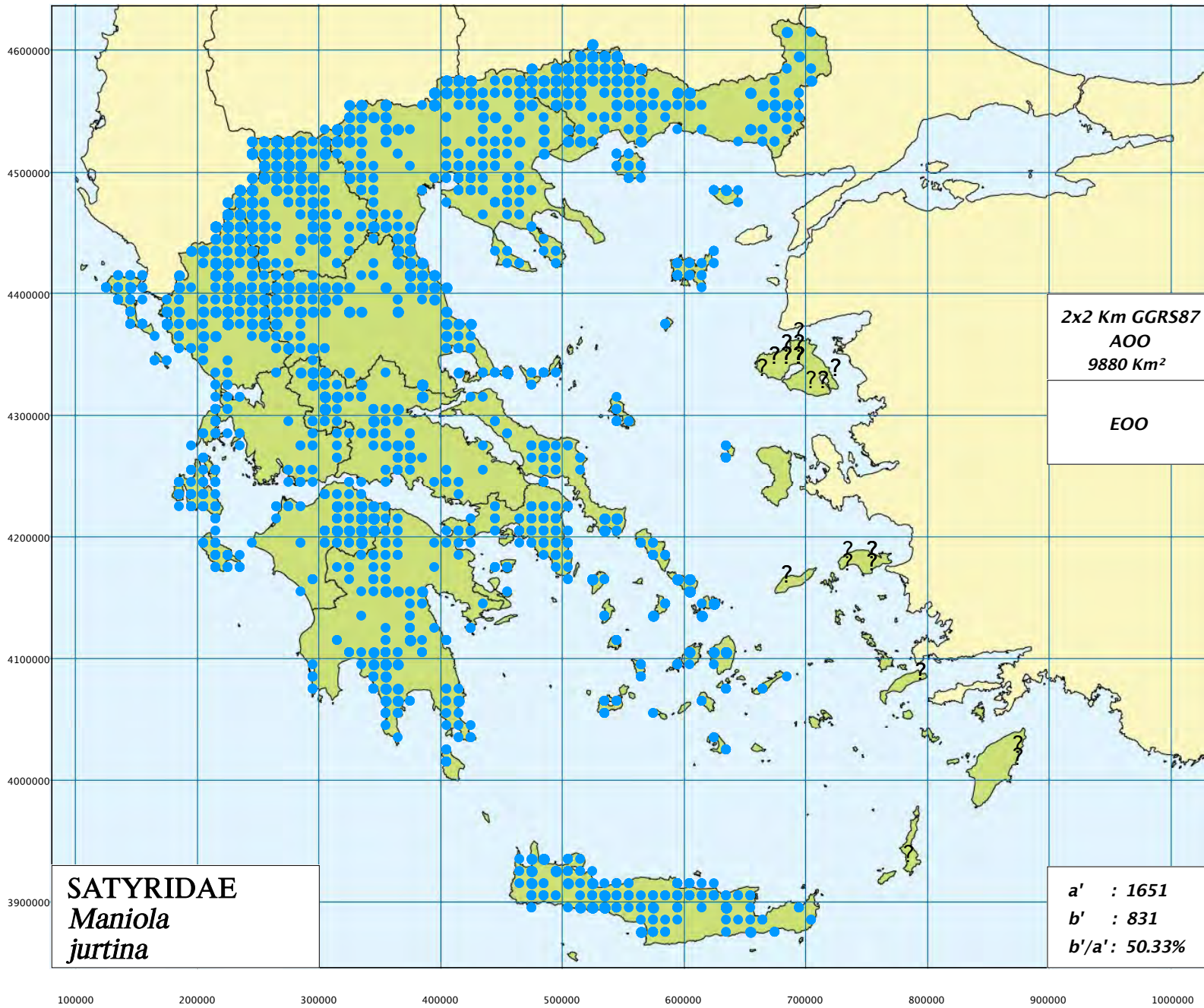
SATYRIDAE
Ypthima
asterope

2x2 Km GGRS87
AOO
88 Km²

EOO

a' : 1651
b' : 13
b'/a' : 0.78%

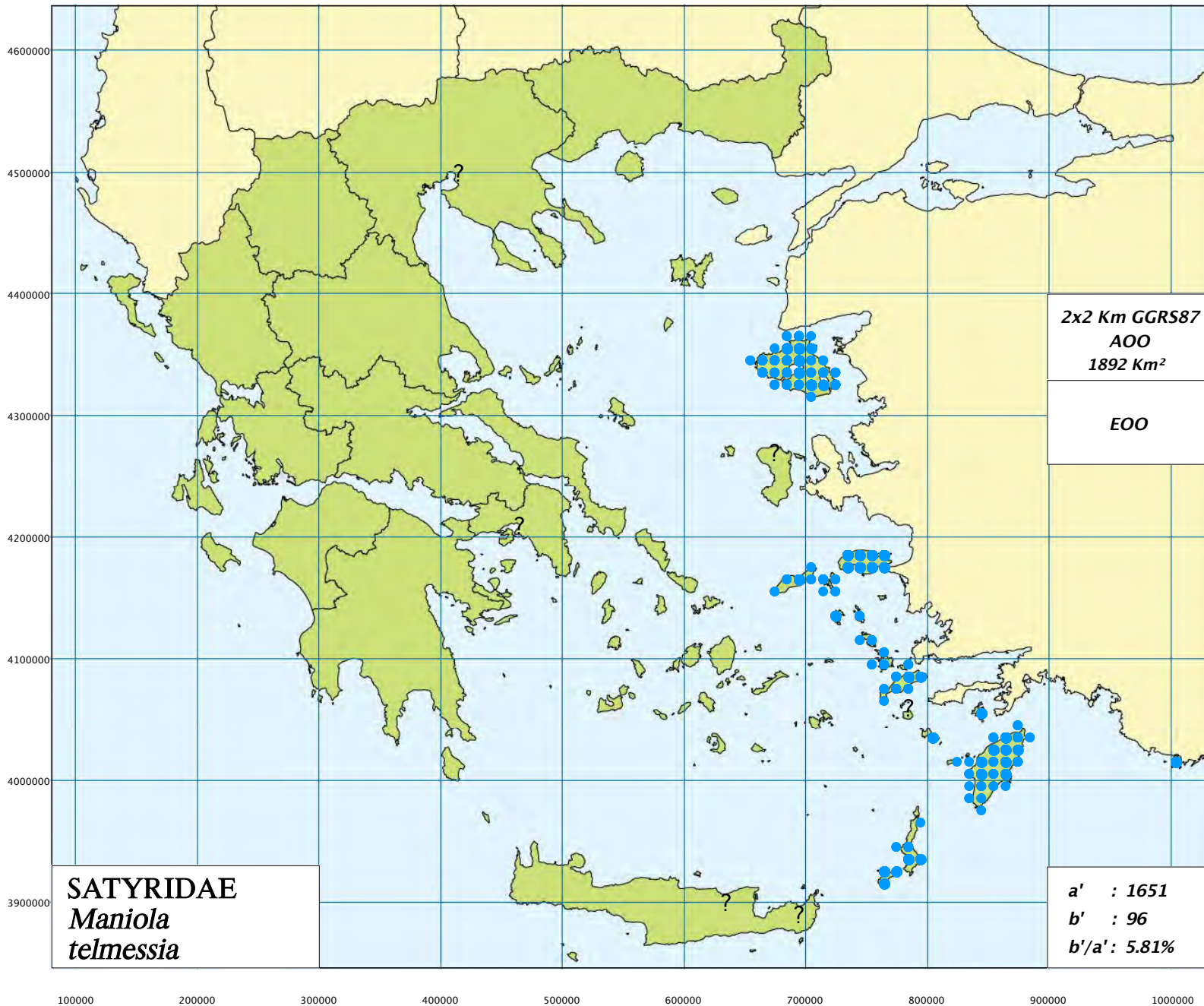
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100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000

https://www.pamperis.gr/PHOTOGRAPHS/Maniola_telmessia_chia_hallicarnassus_complex.html



https://www.pamperis.gr/PHOTOGRAPHS/Maniola_telmessia_chia_hallicarnassus_complex.html

ΕΝΔΗΜΙΚΟ ΕΙΔΟΣ ΤΗΣ ΕΛΛΑΔΑΣ
ENDEMIC SPECIES OF GREECE

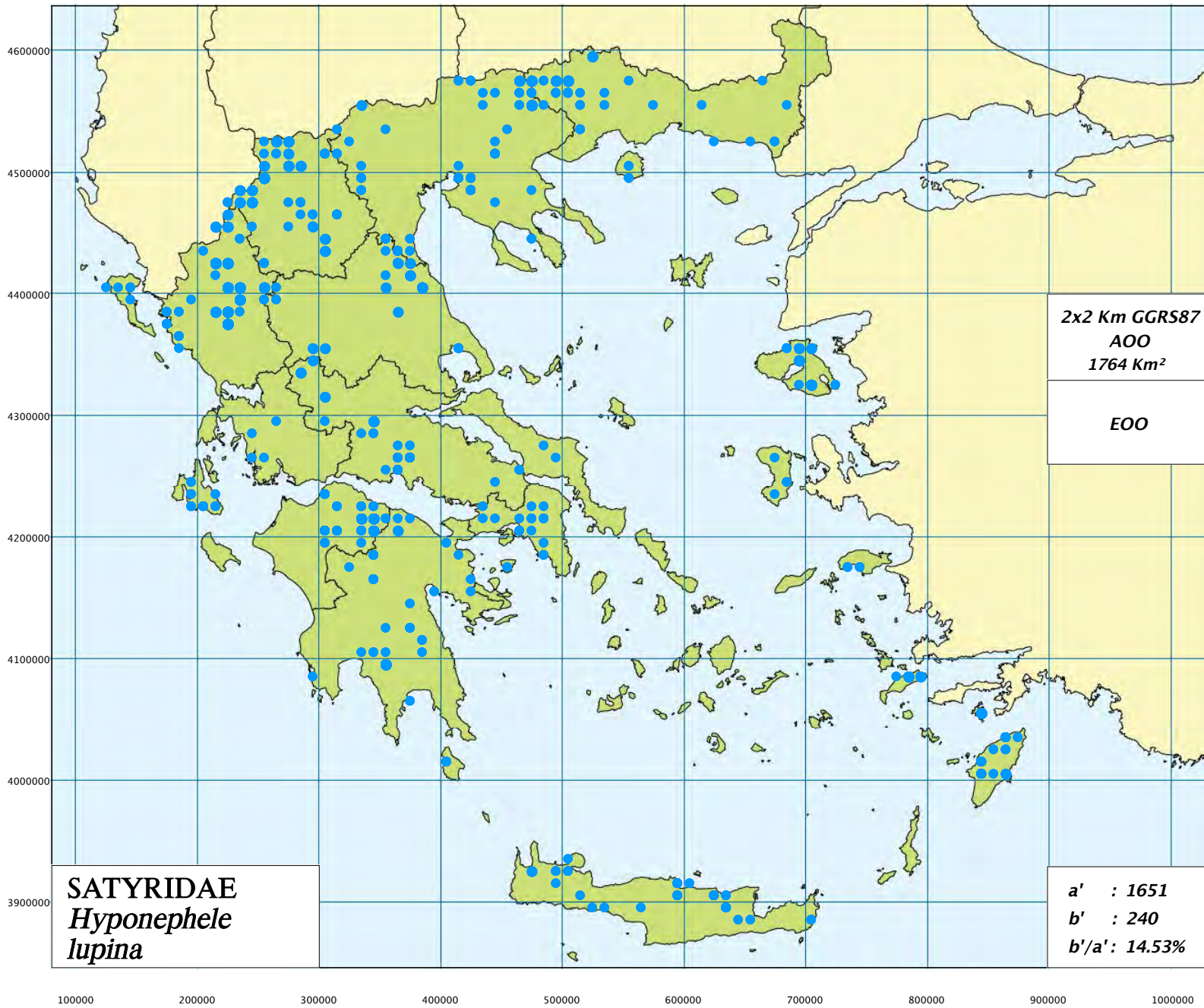


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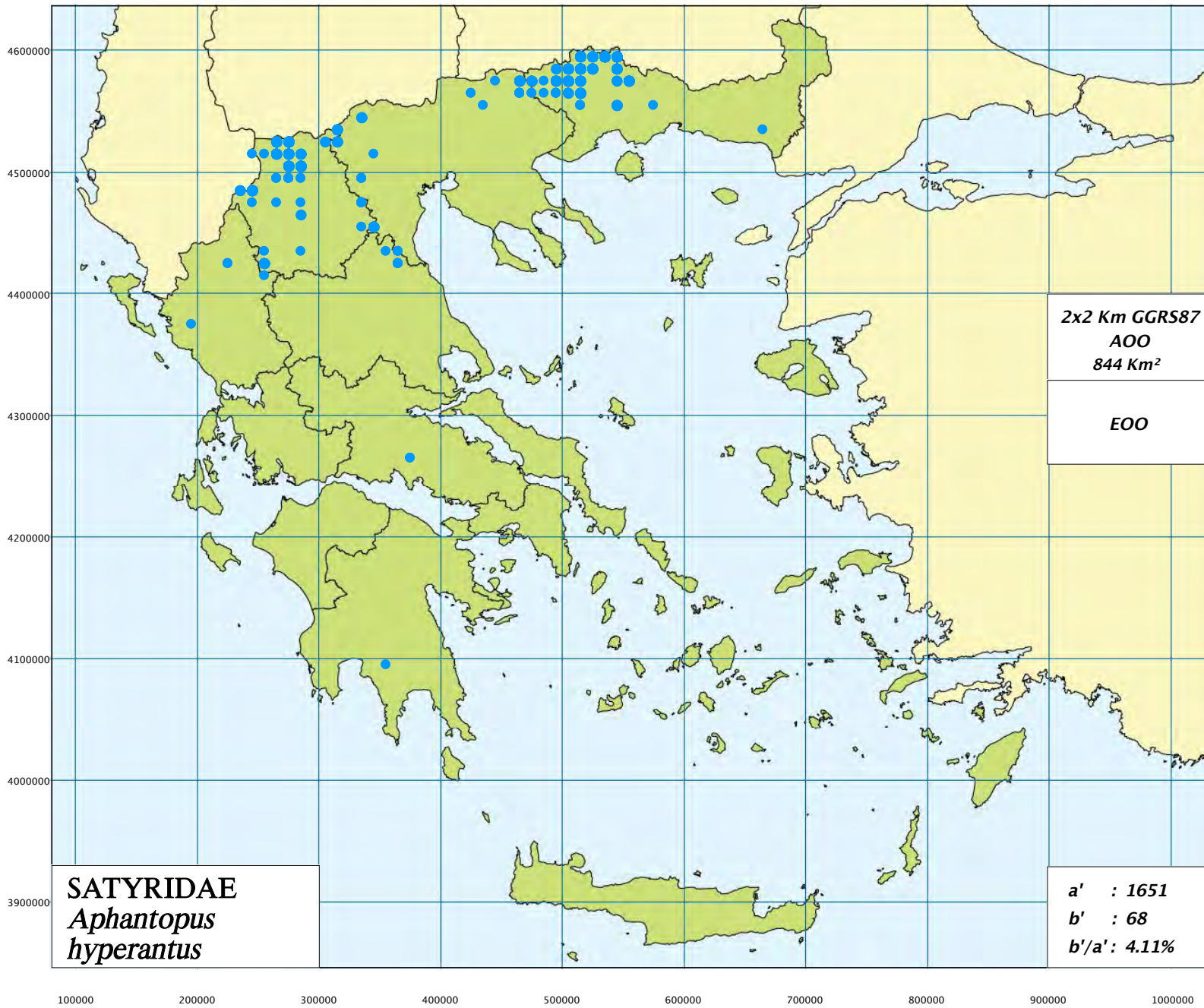


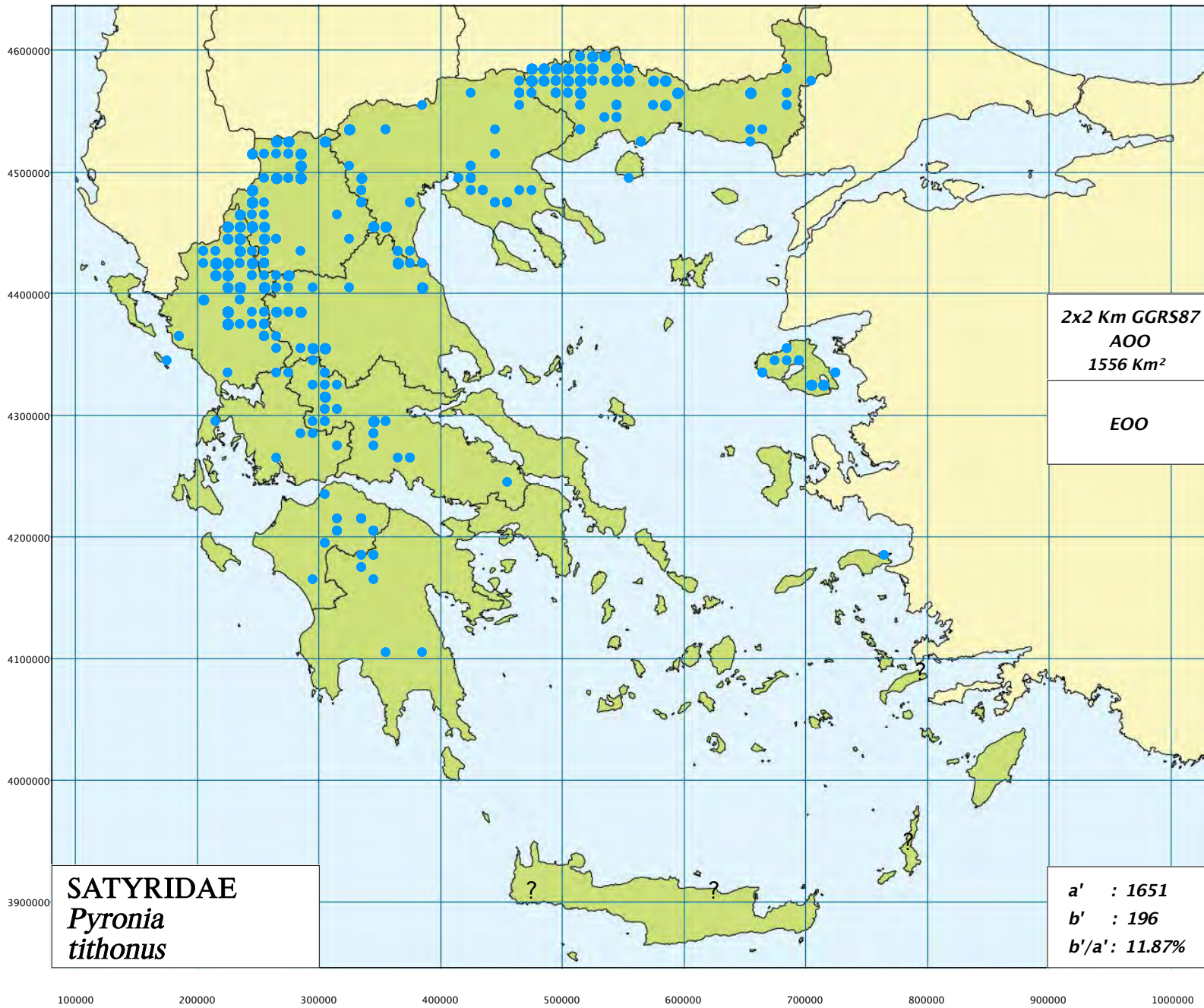
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100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000

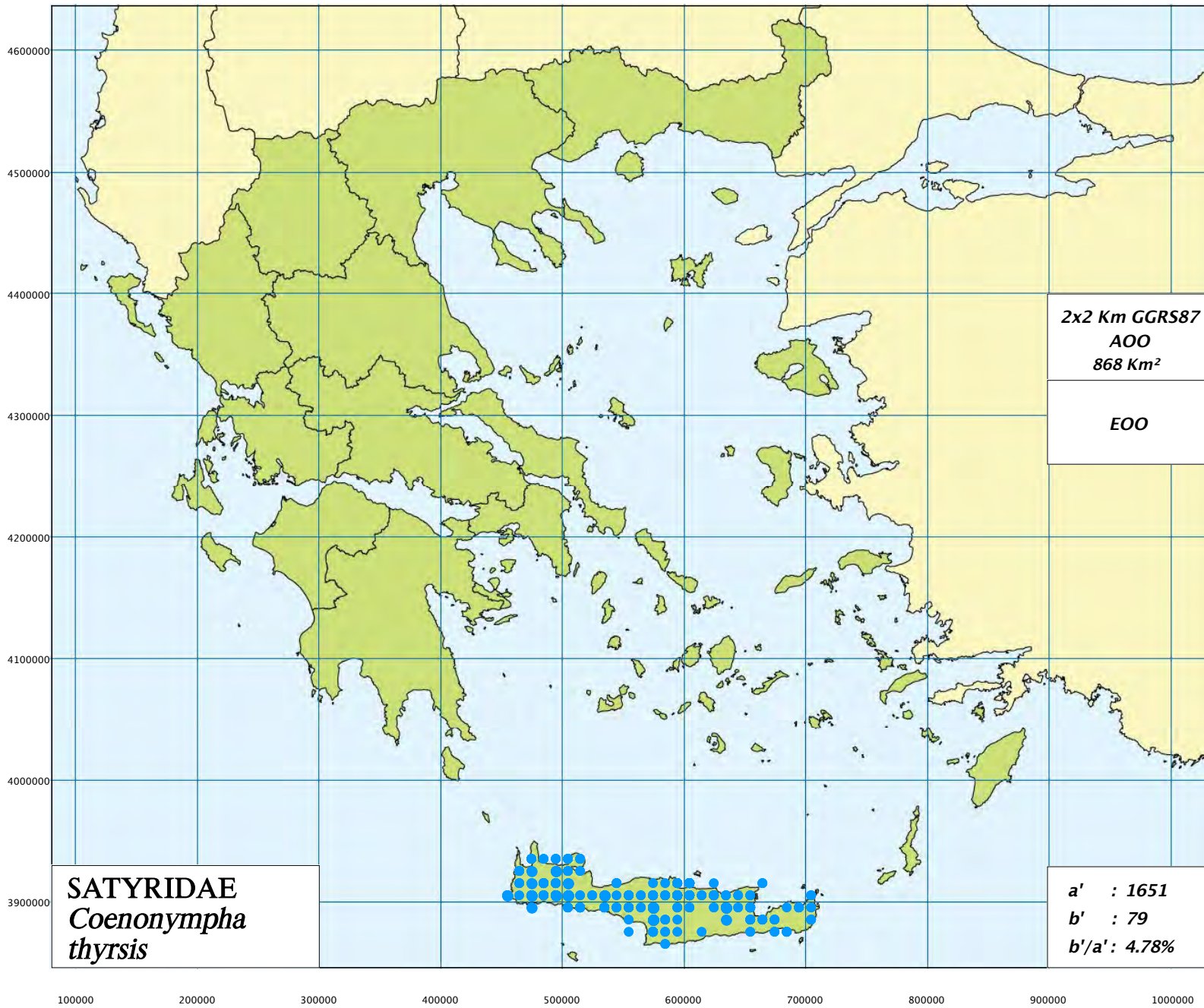
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ΕΝΔΗΜΙΚΟ ΕΙΔΟΣ ΤΗΣ ΕΛΛΑΔΑΣ
 ENDEMIC SPECIES OF GREECE

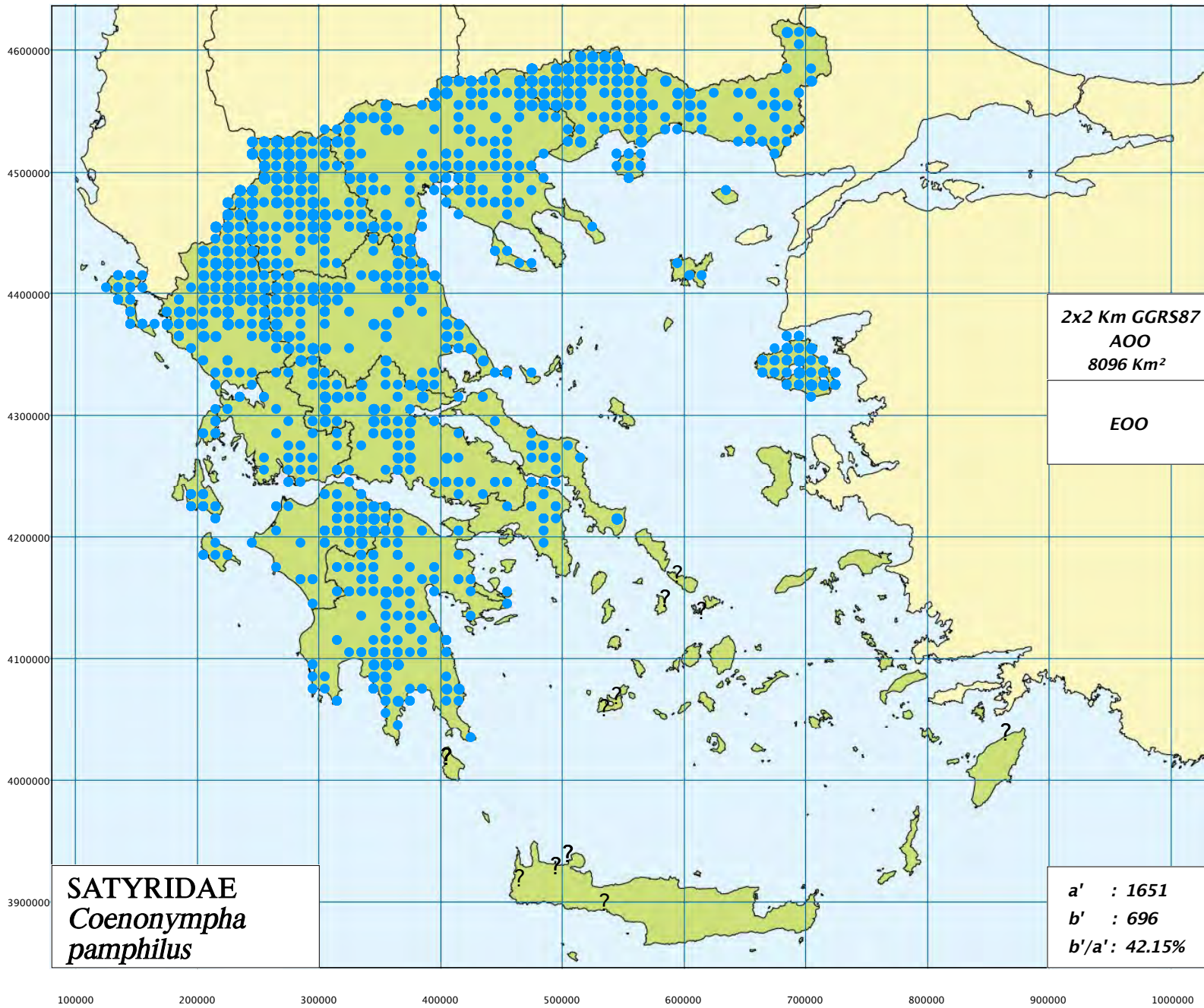


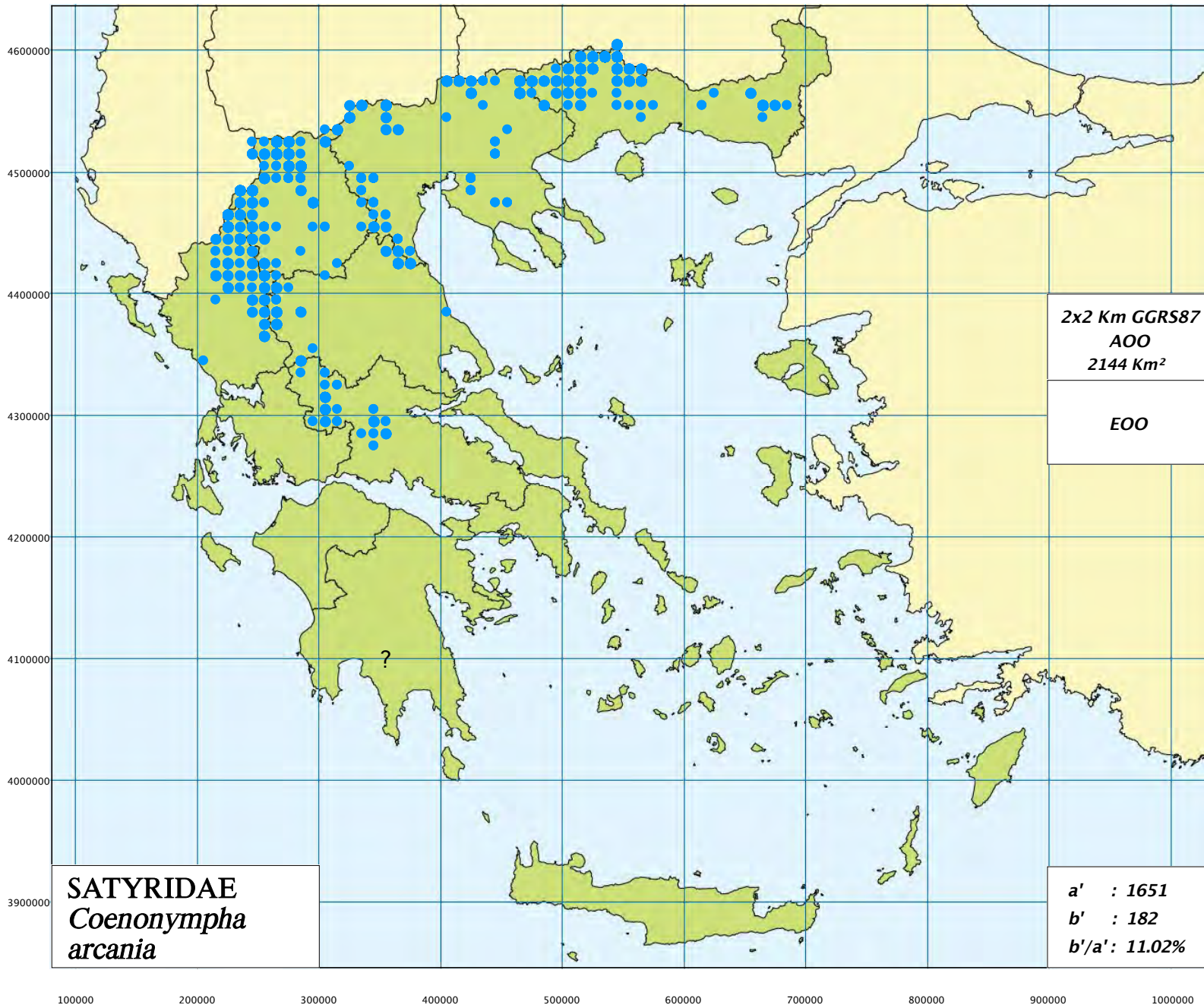
SATYRIDAE
Coenonympha
thyrsis

a' : 1651
b' : 79
b'/a' : 4.78%

2x2 Km GGRS87
 AOO
 868 Km²
 EOO

100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000











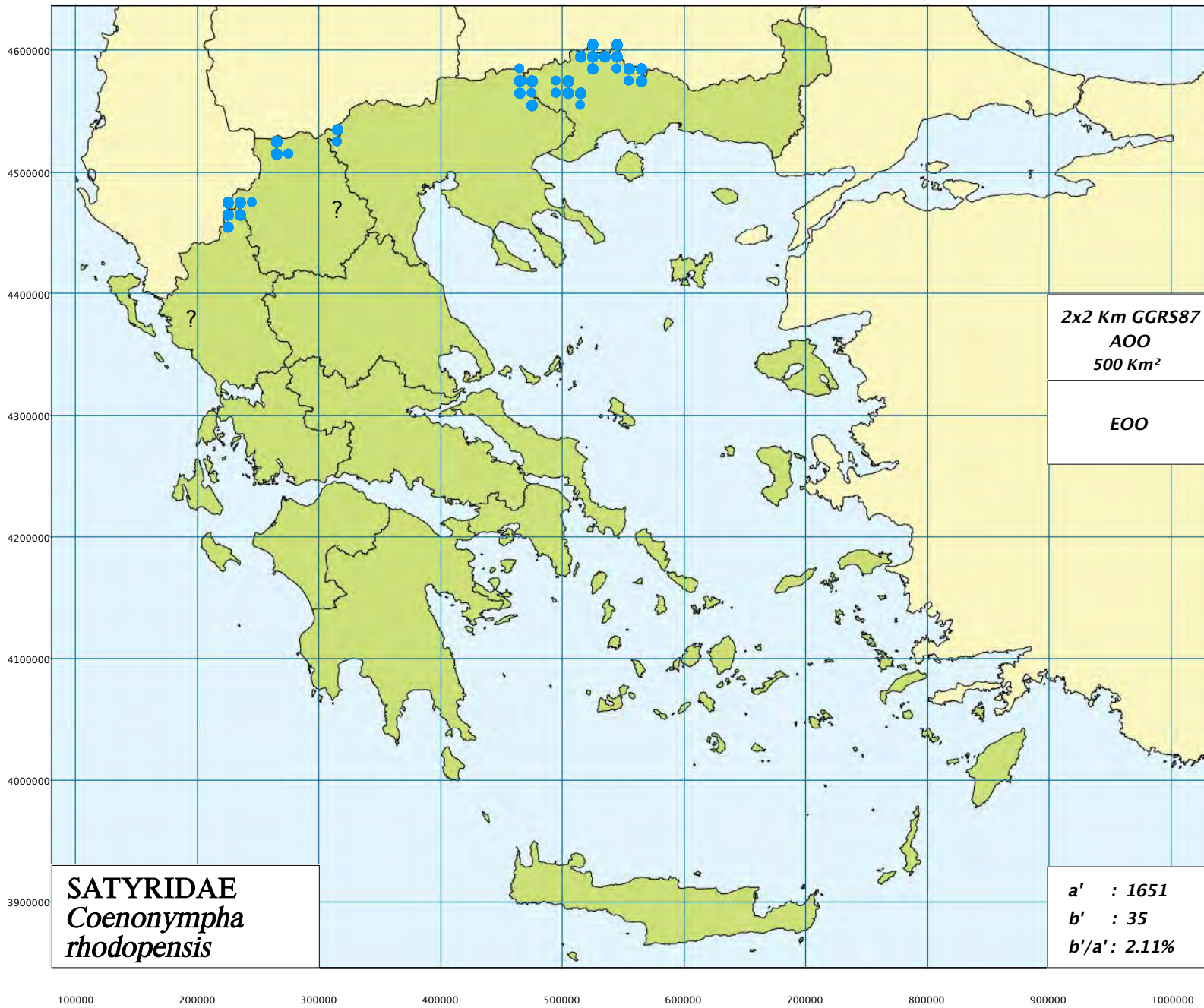
SATYRIDAE
Coenonympha
glycerion

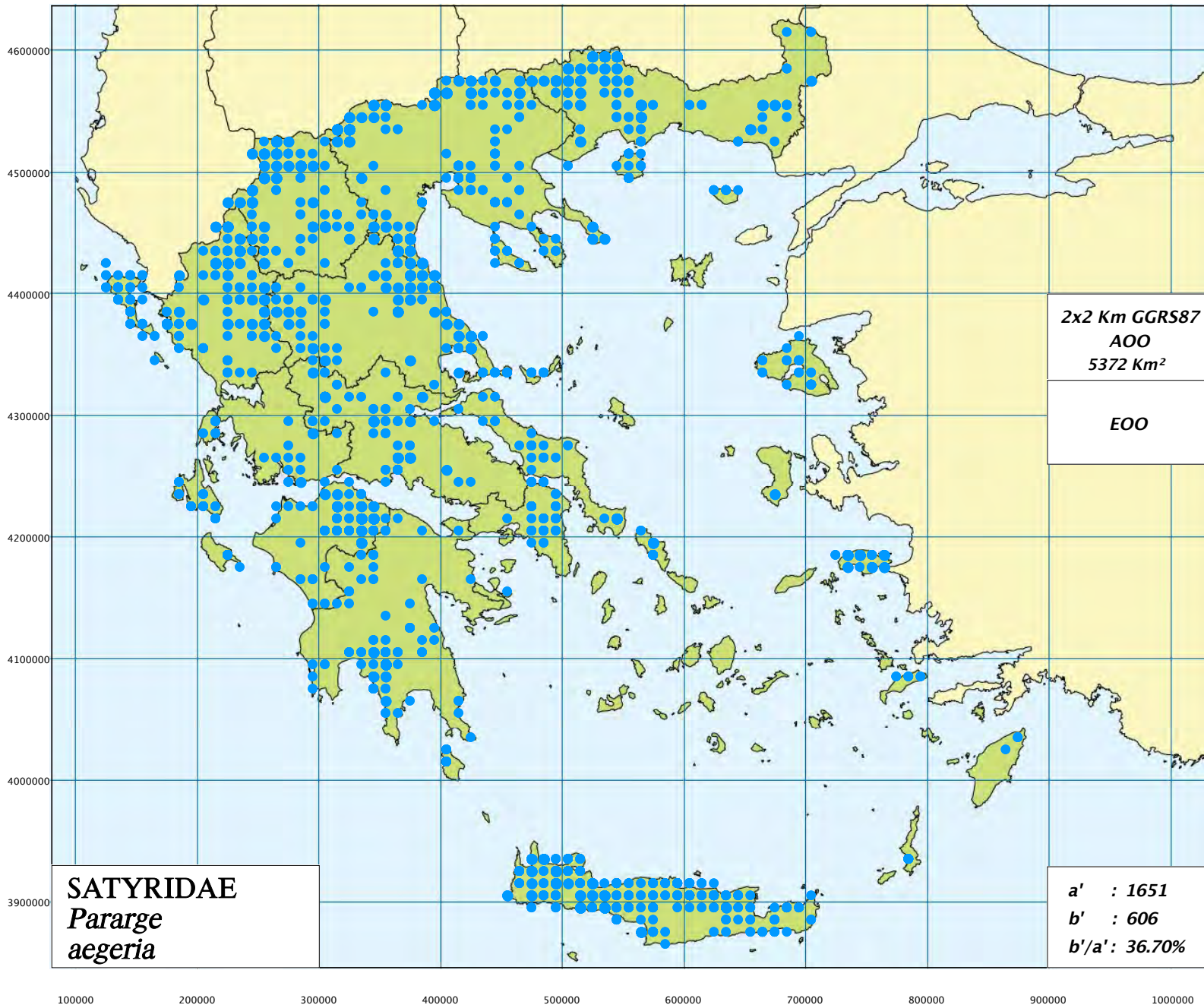
2x2 Km GGRS87
AOO
84 Km²

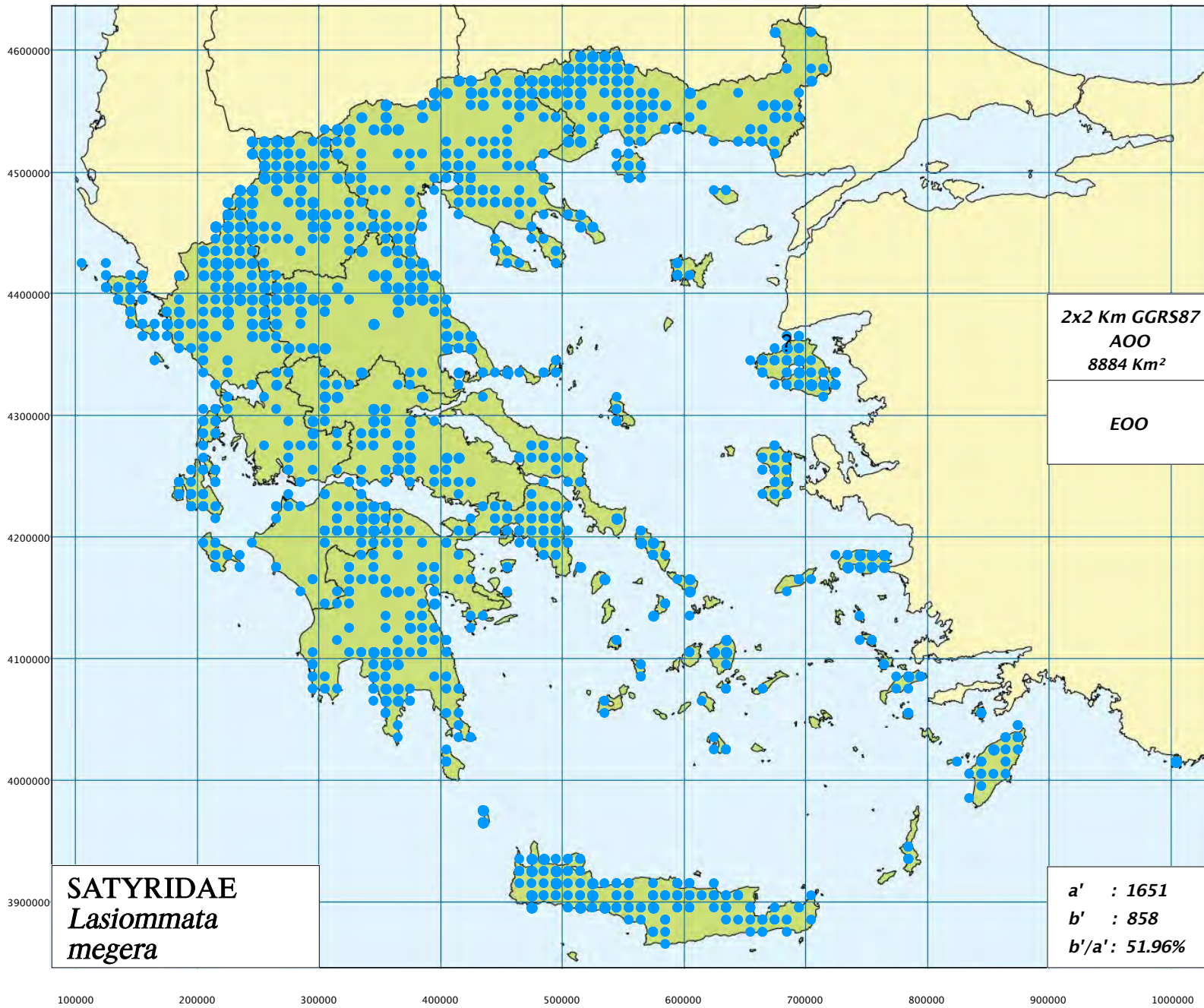
EOO

a' : 1651
b' : 7
b'/a' : 0.42%

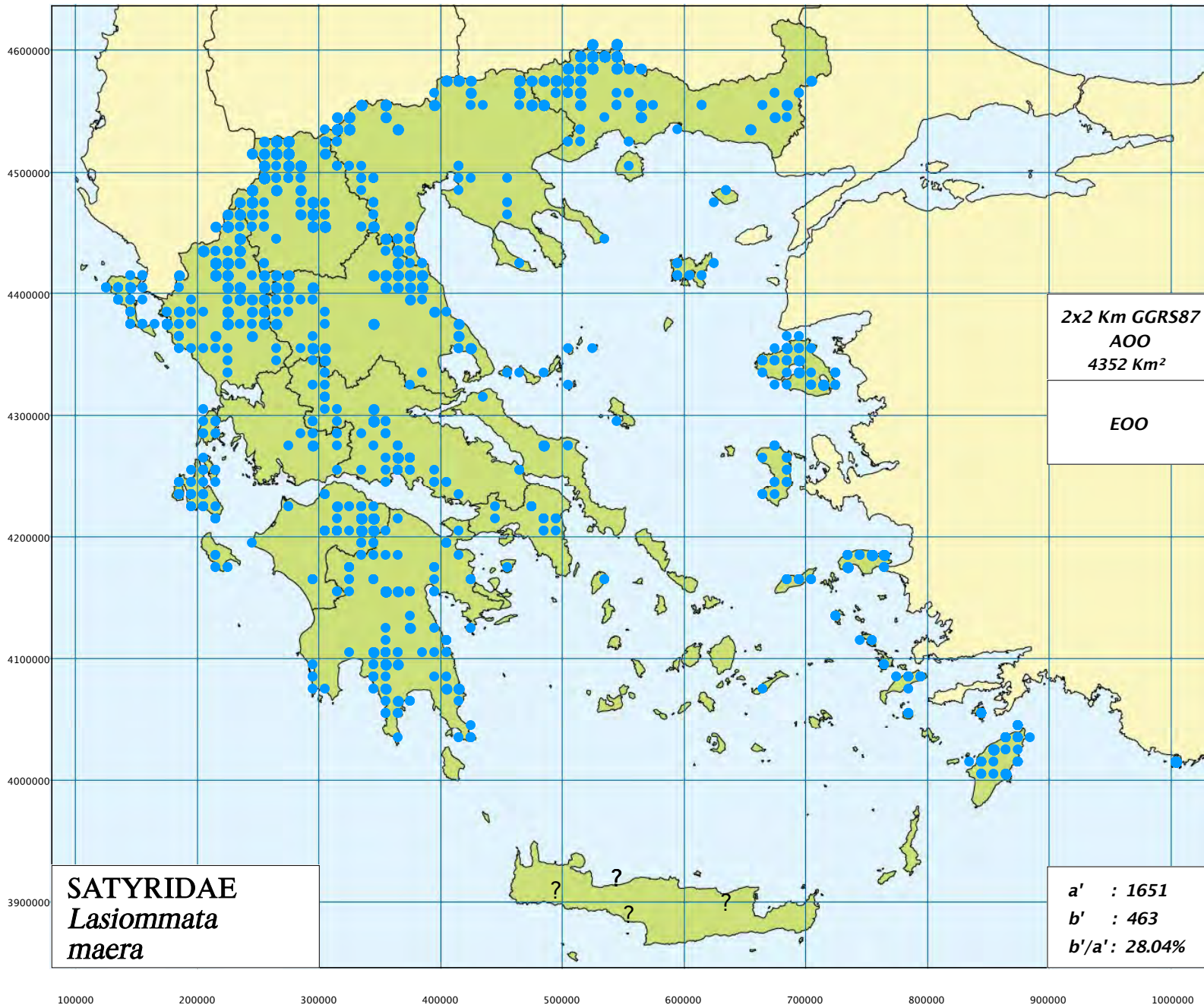
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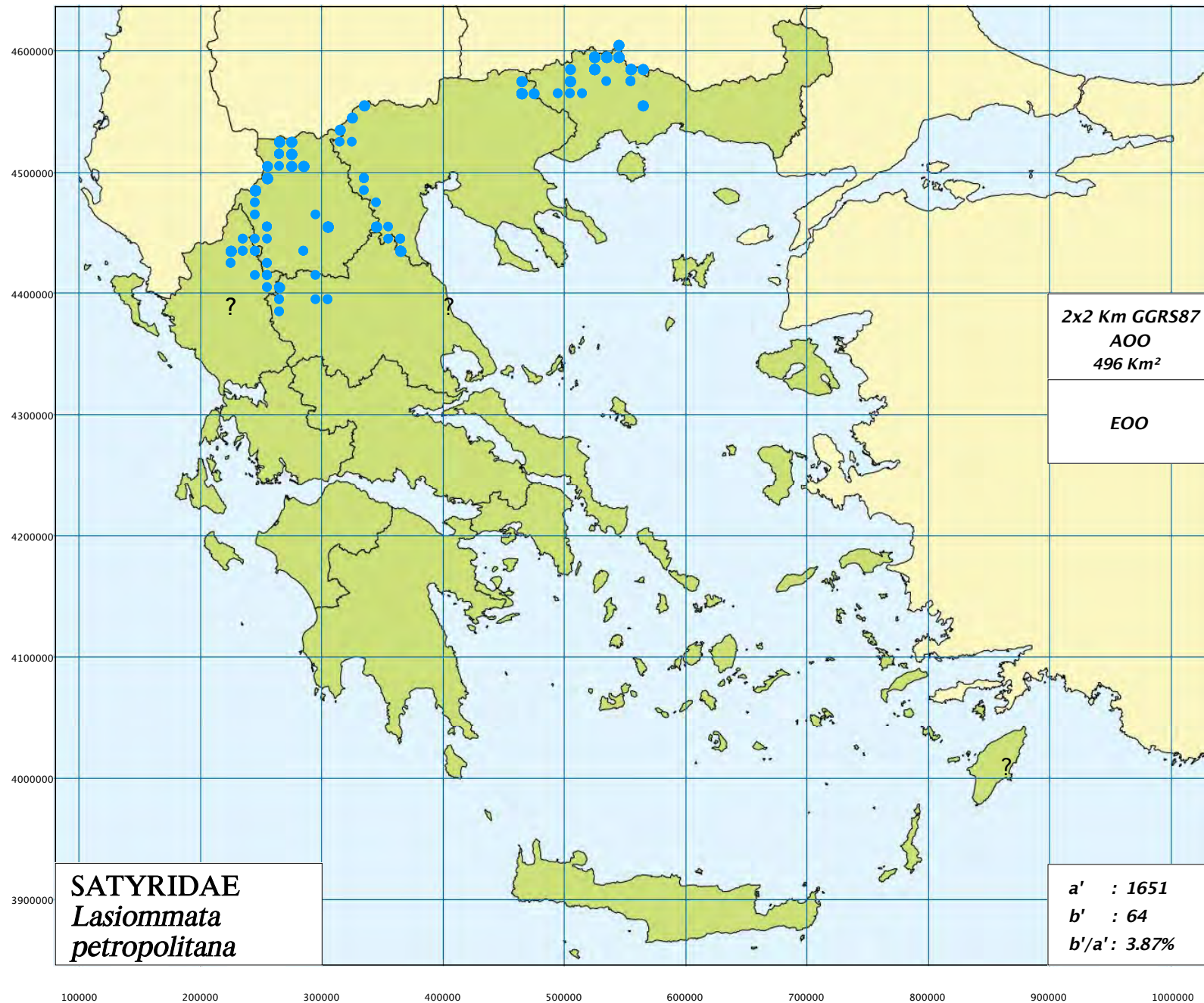


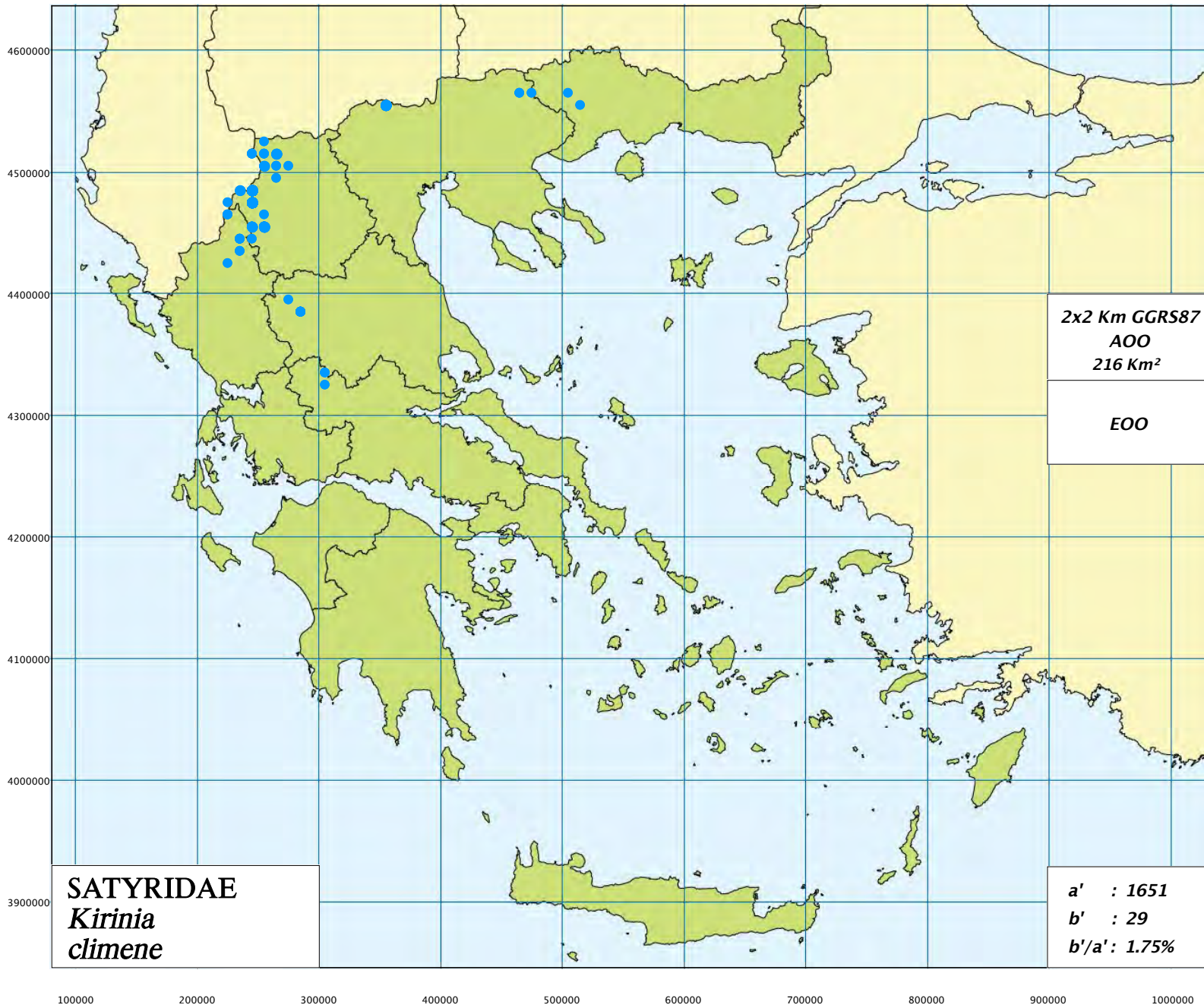


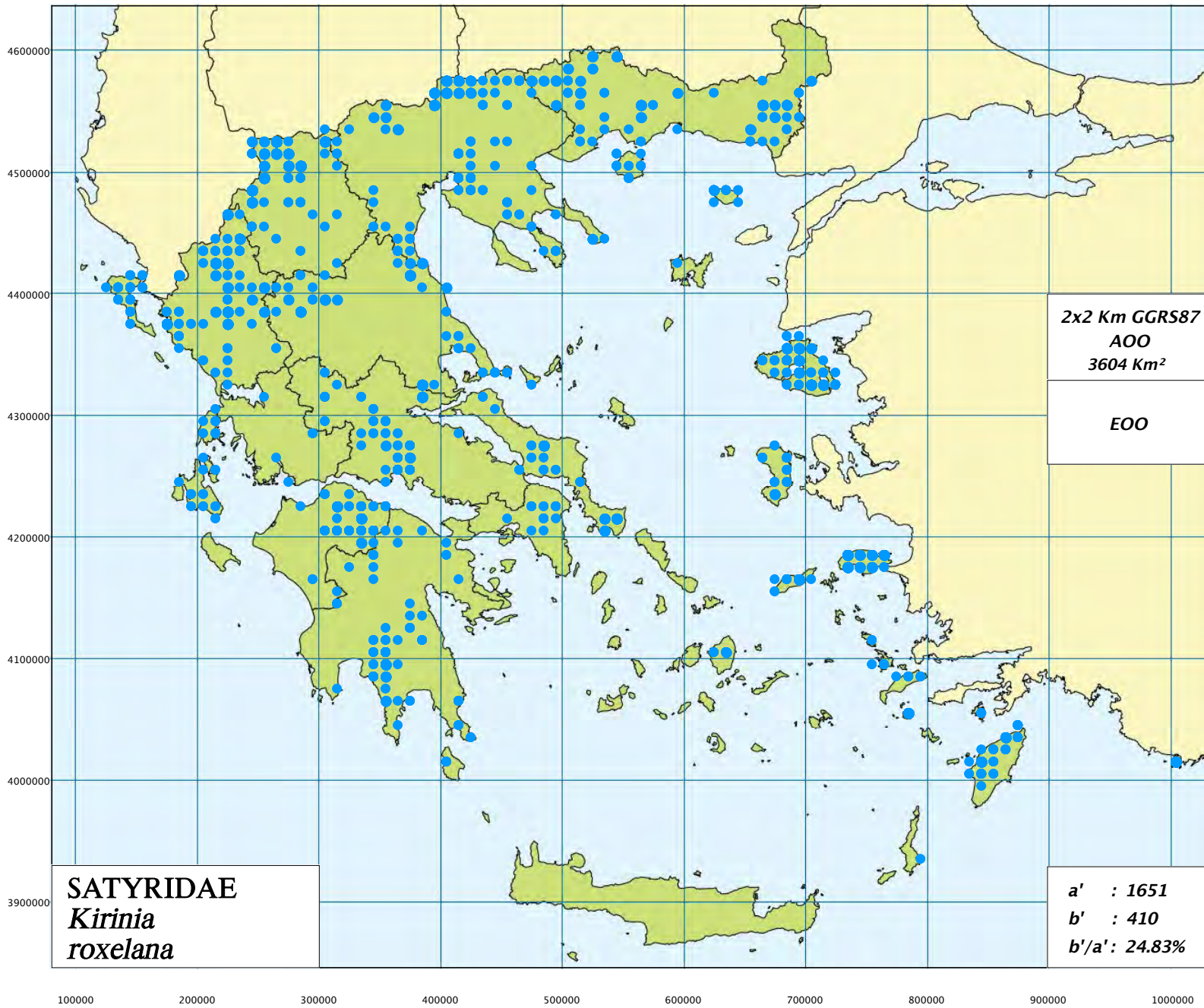
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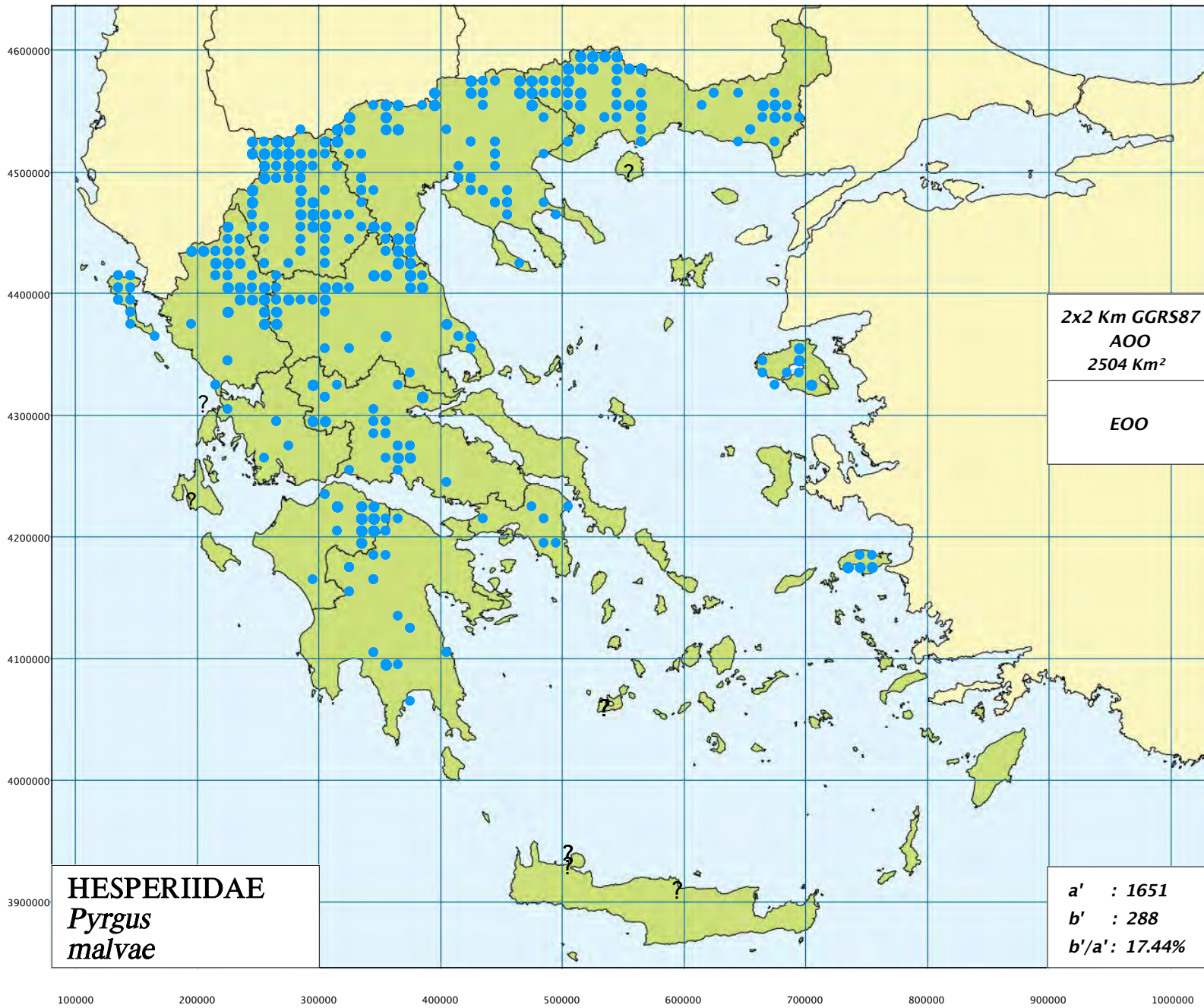






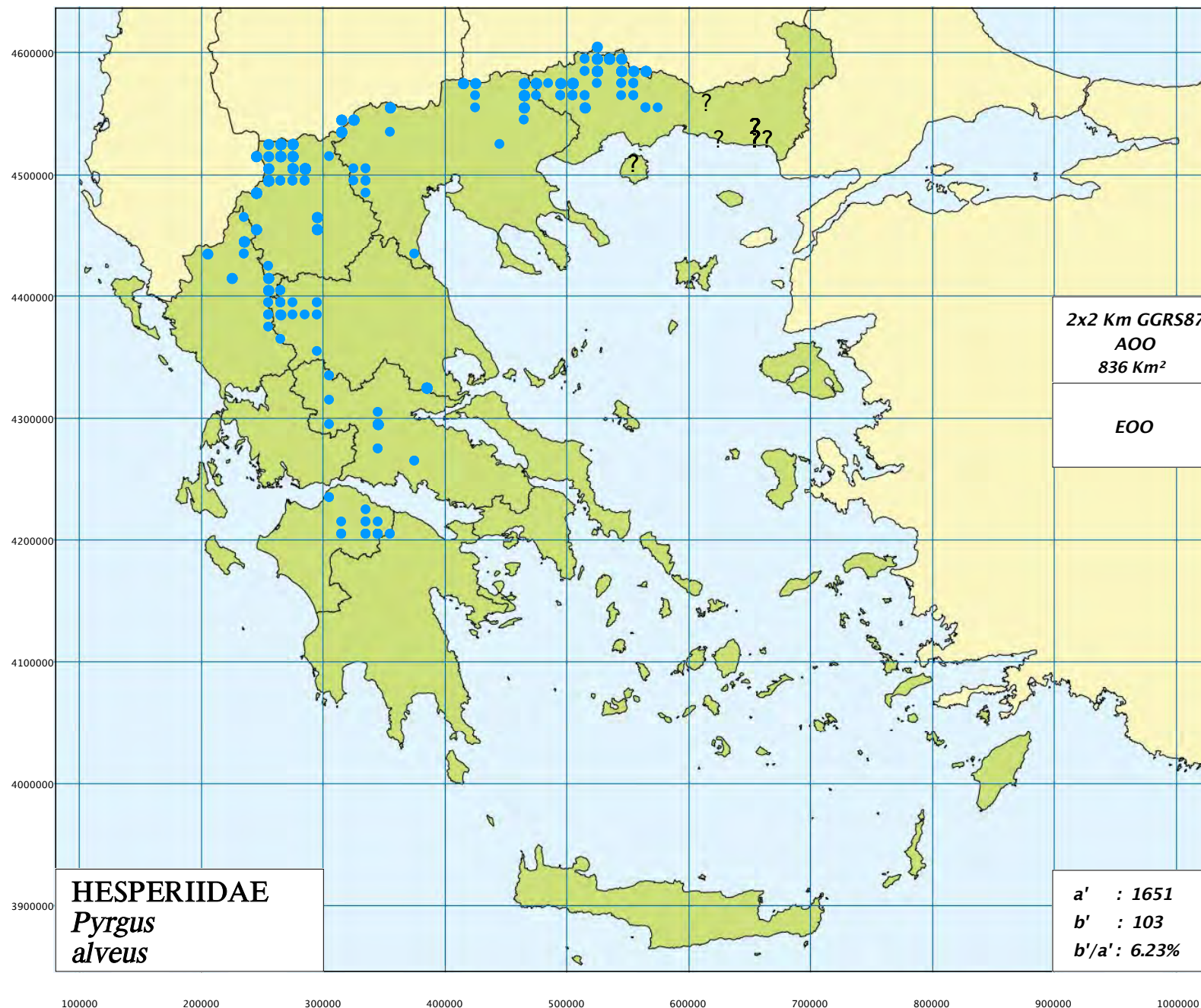
SATYRIDAE
Kirinia
roxelana

100000 200000 300000 400000 500000 600000 700000 800000 900000 1000000



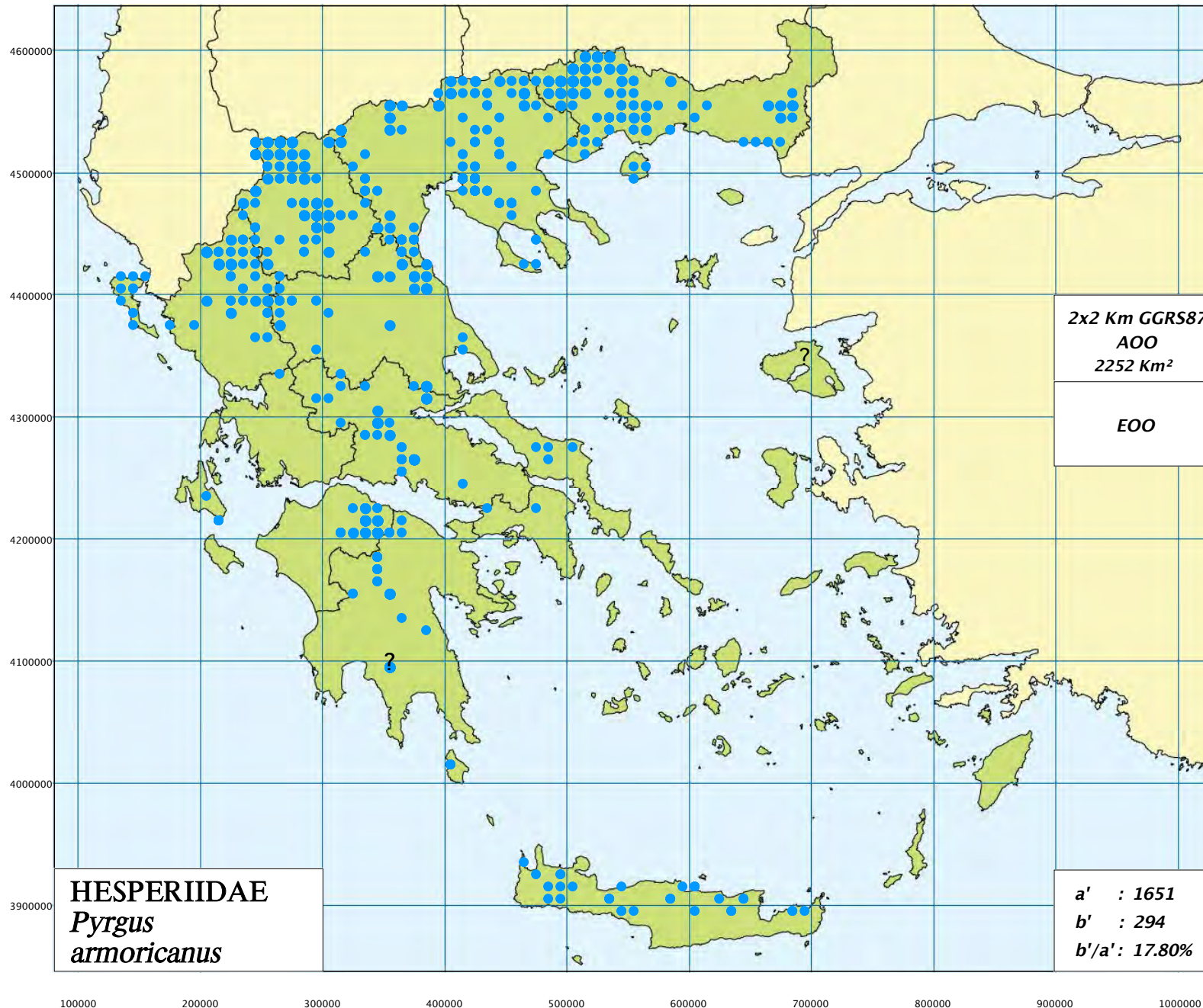
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Αμφίβολη αναγνώριση /
Identification Uncertain



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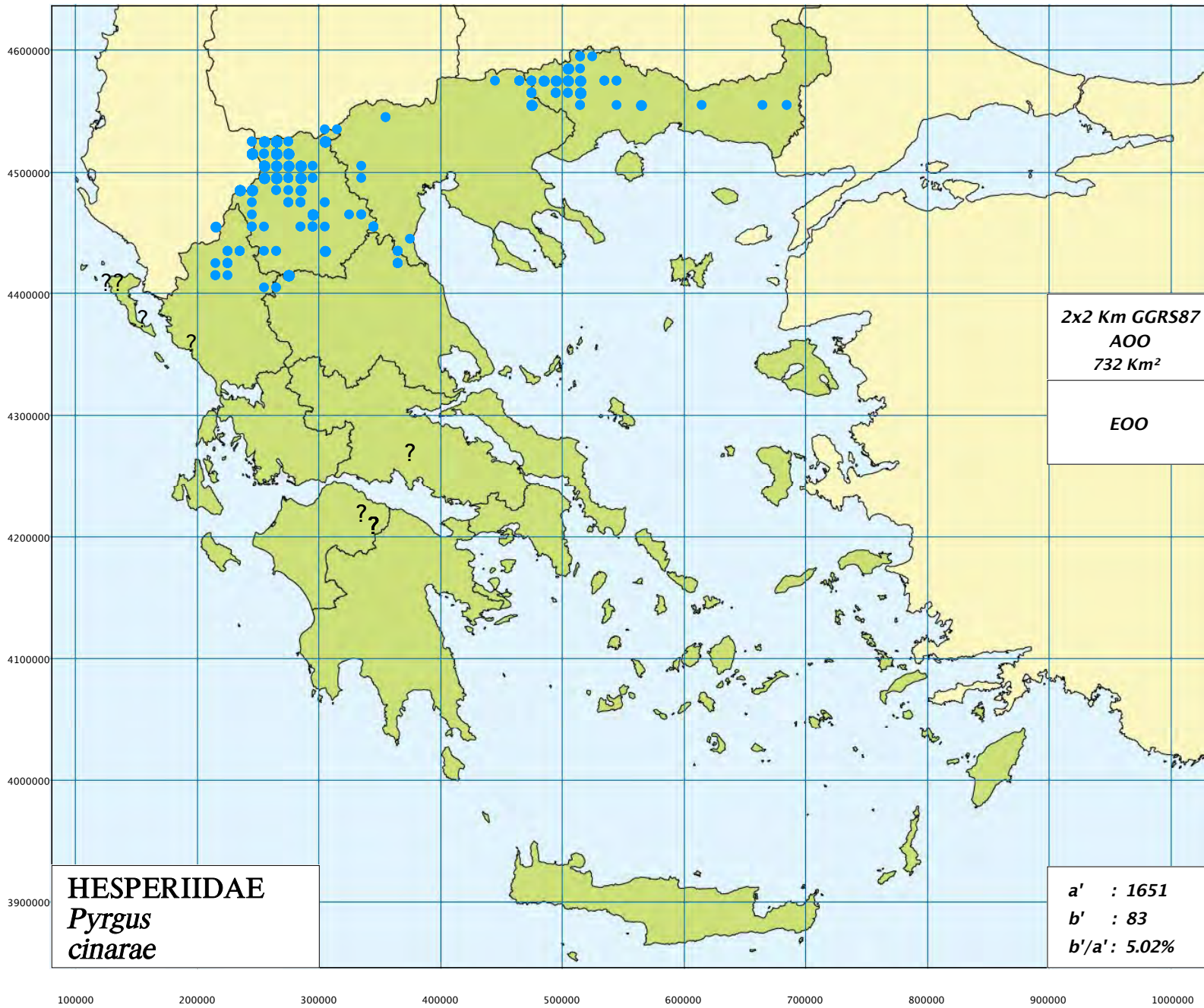
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Identification Uncertain



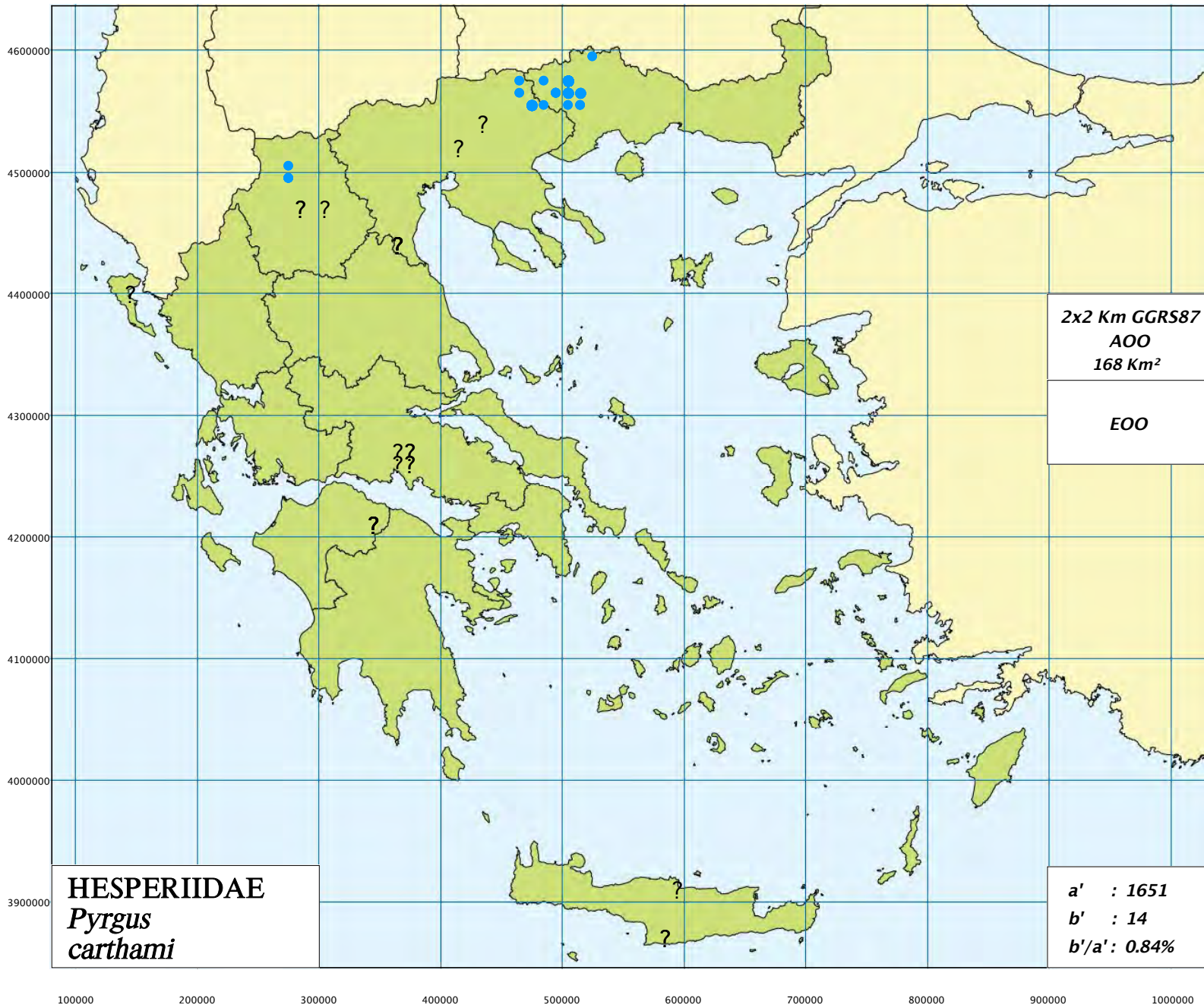


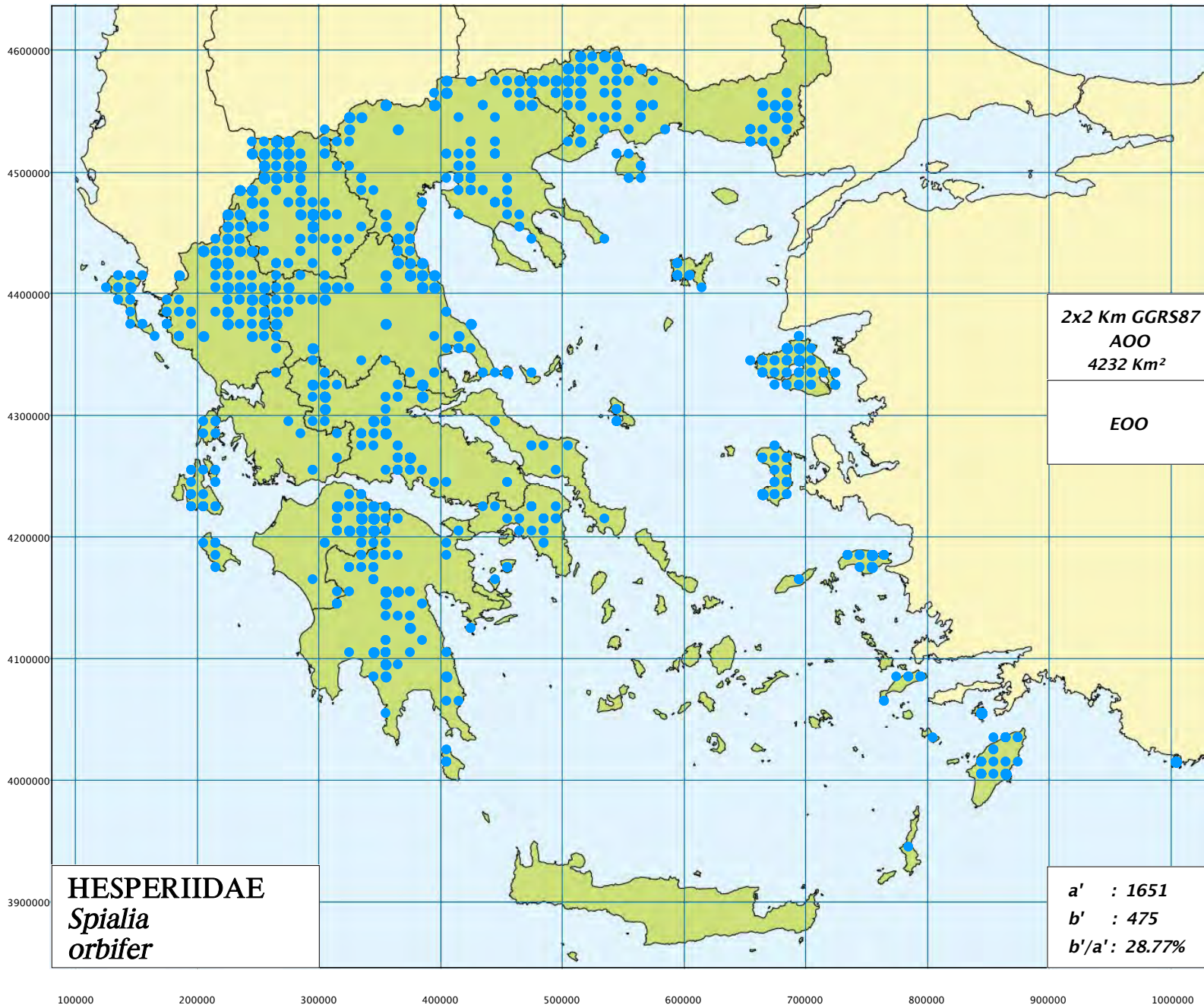
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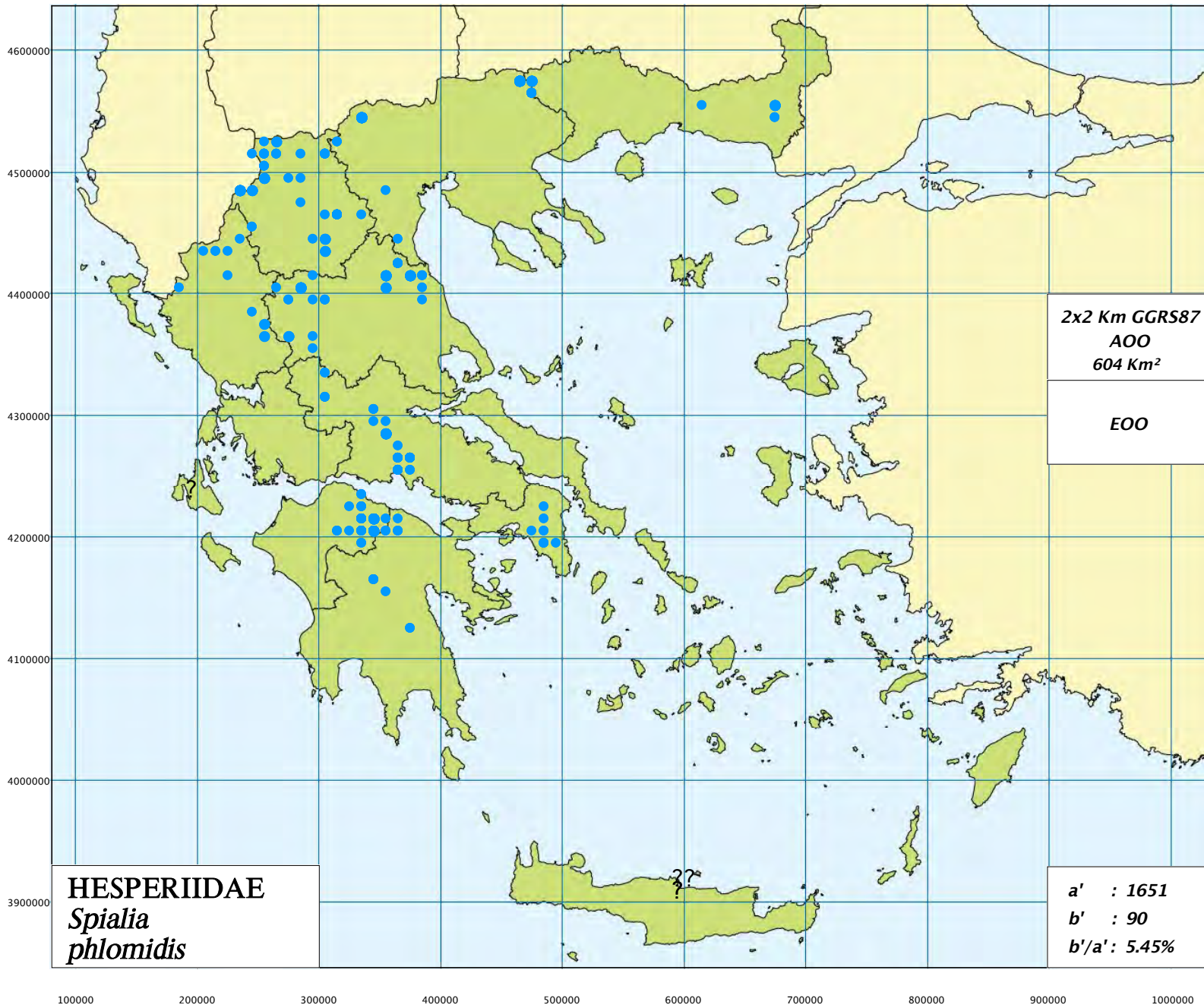
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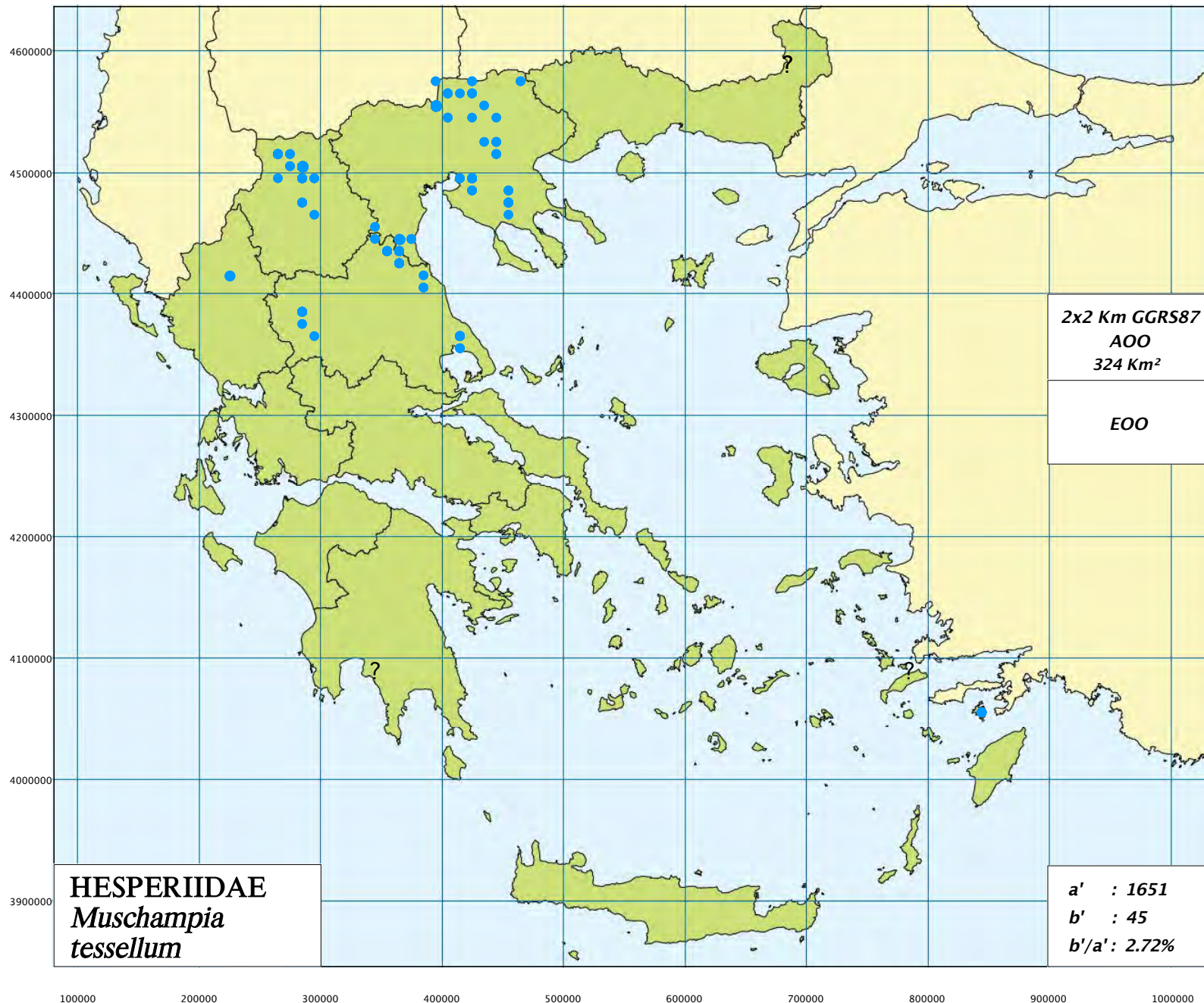


HESPERIIDAE
Pyrgus
cinarae

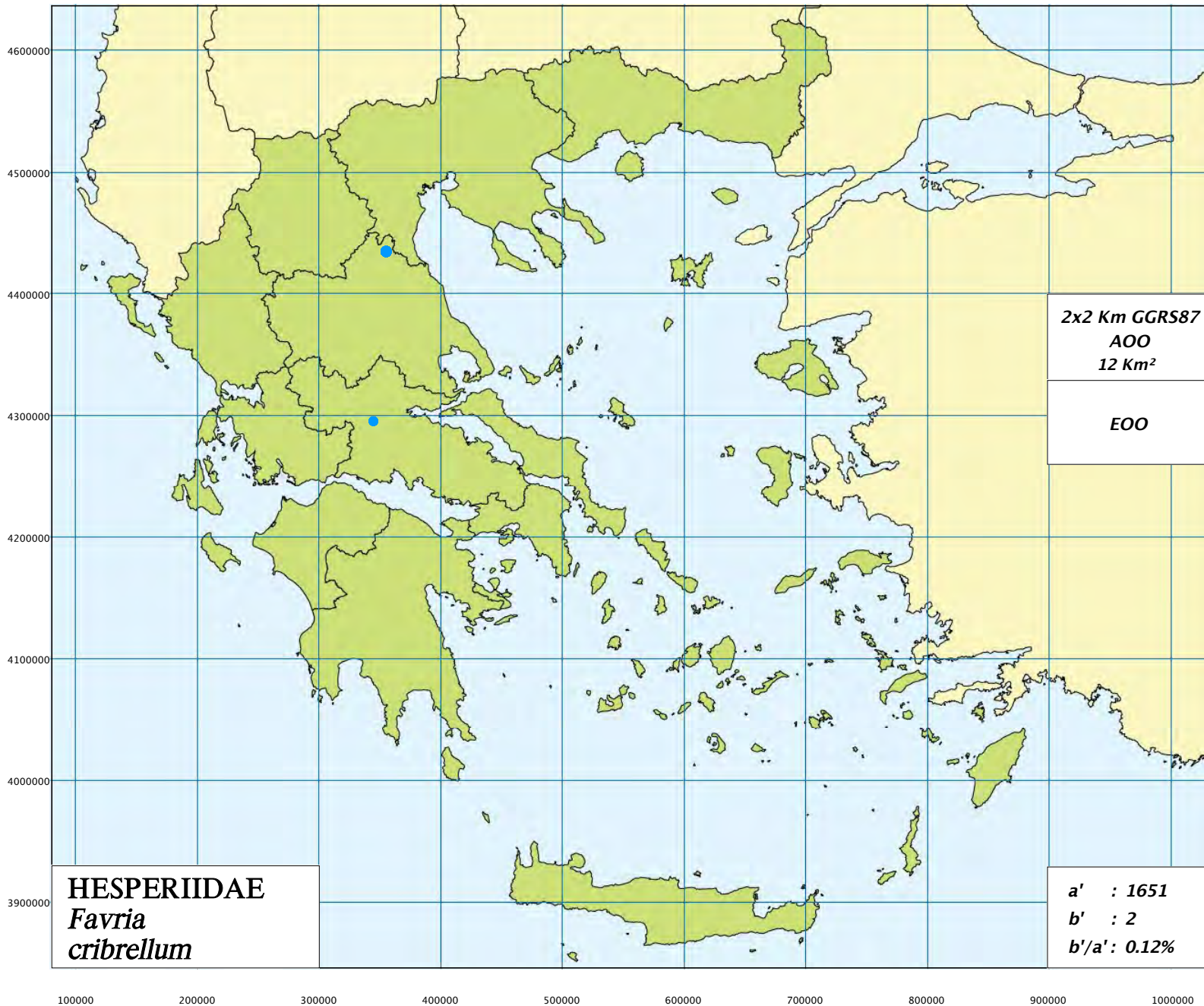


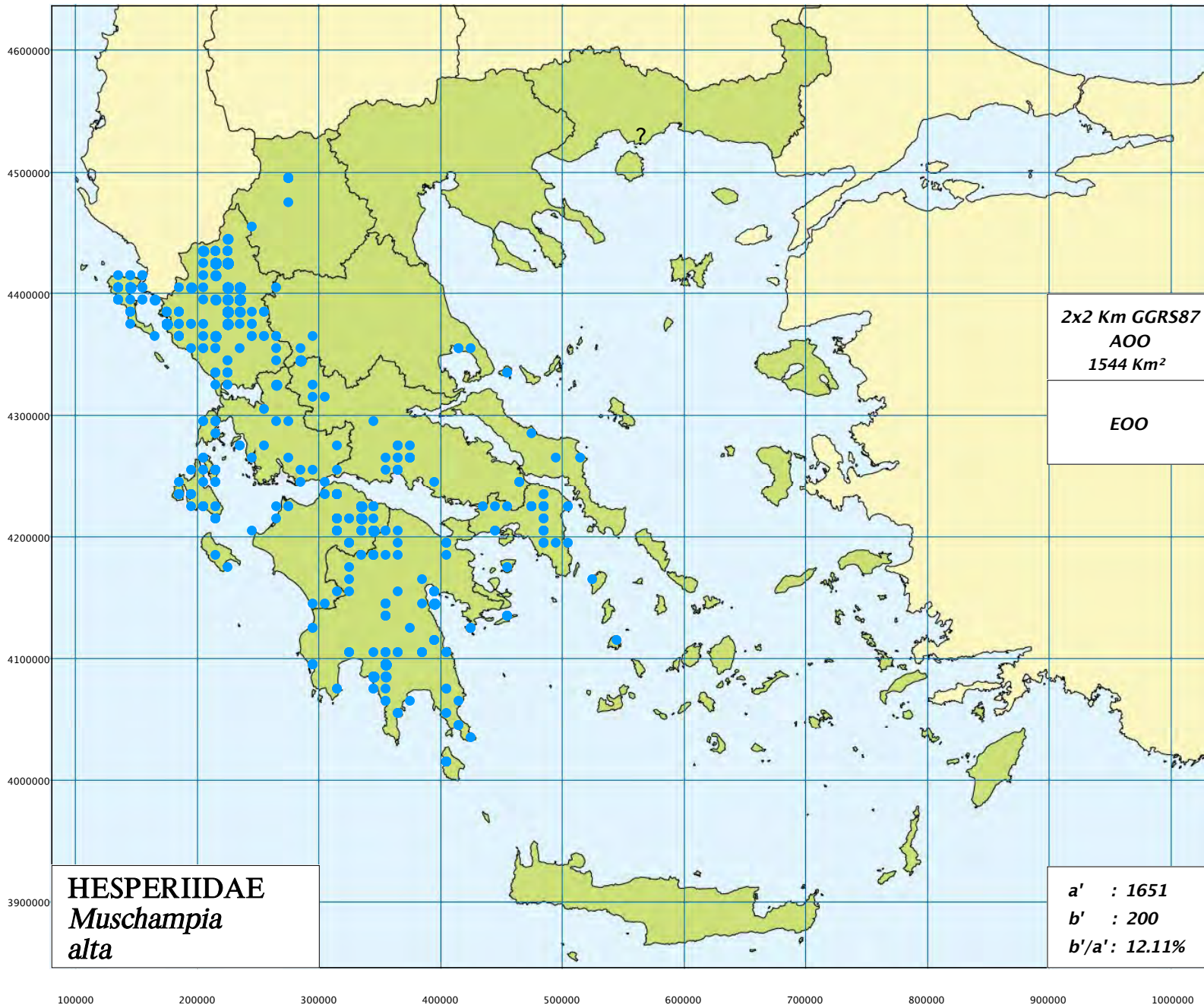


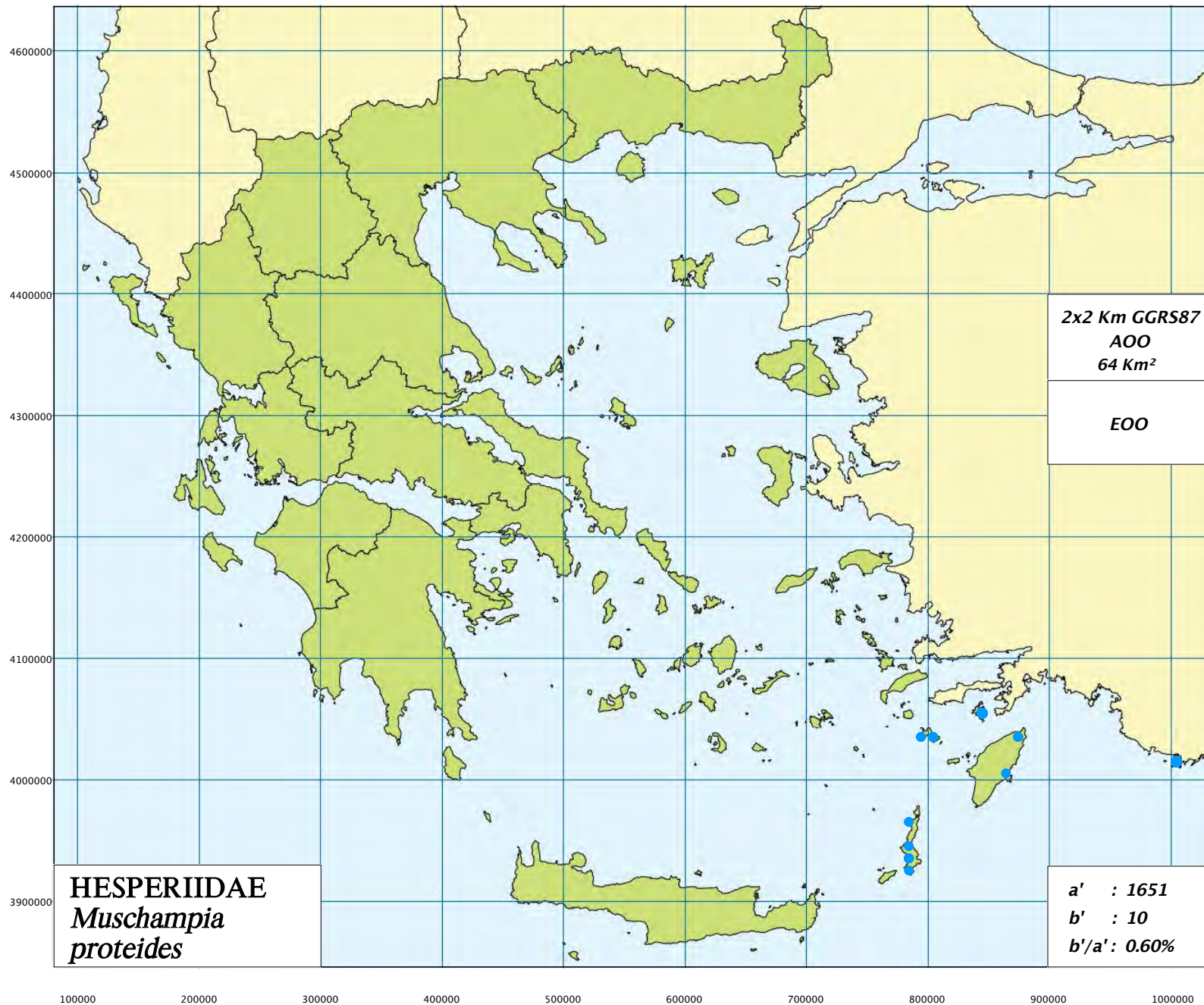


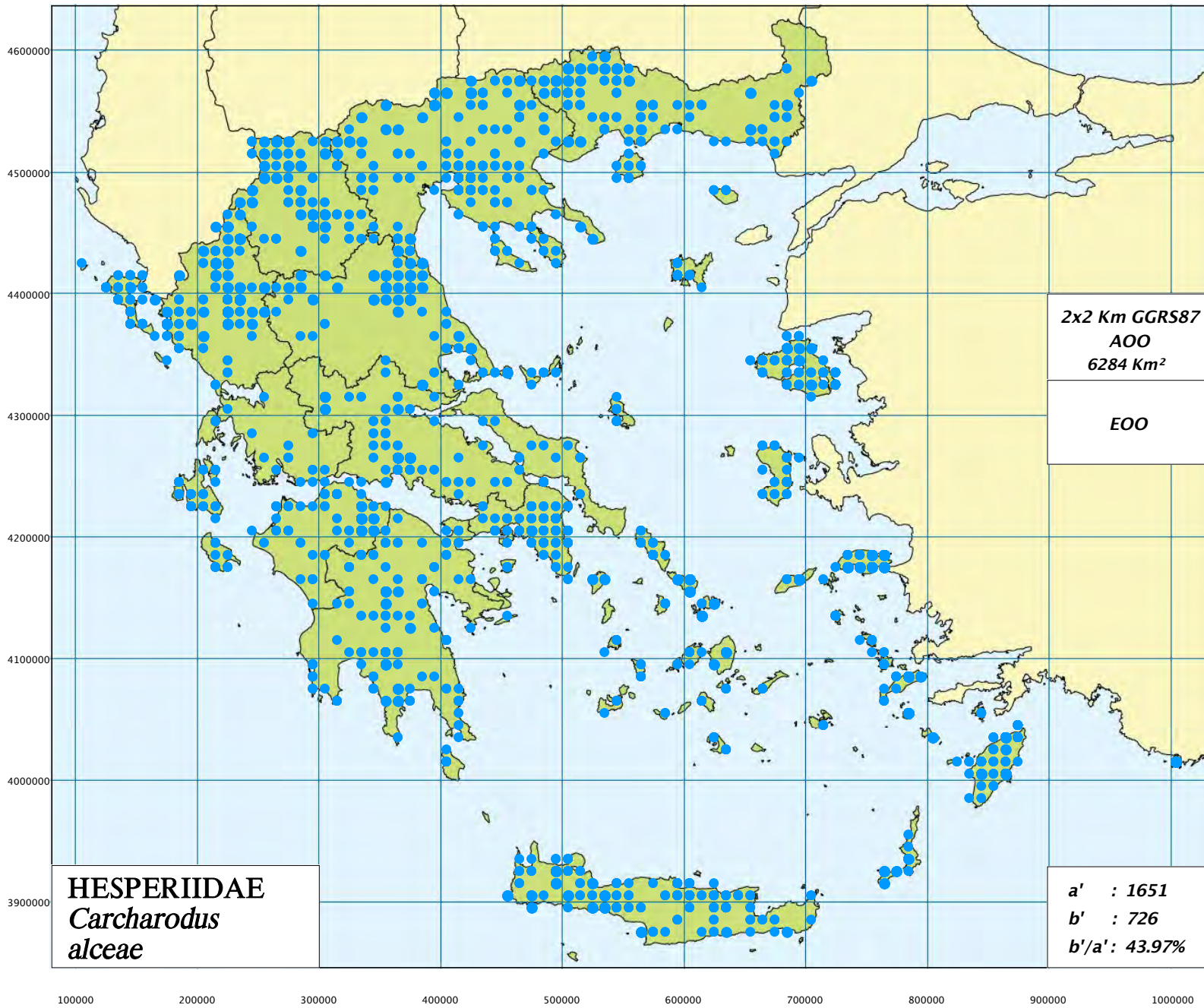


<https://www.pamperis.gr/PHOTOGRAPHS/Muschampia.html>



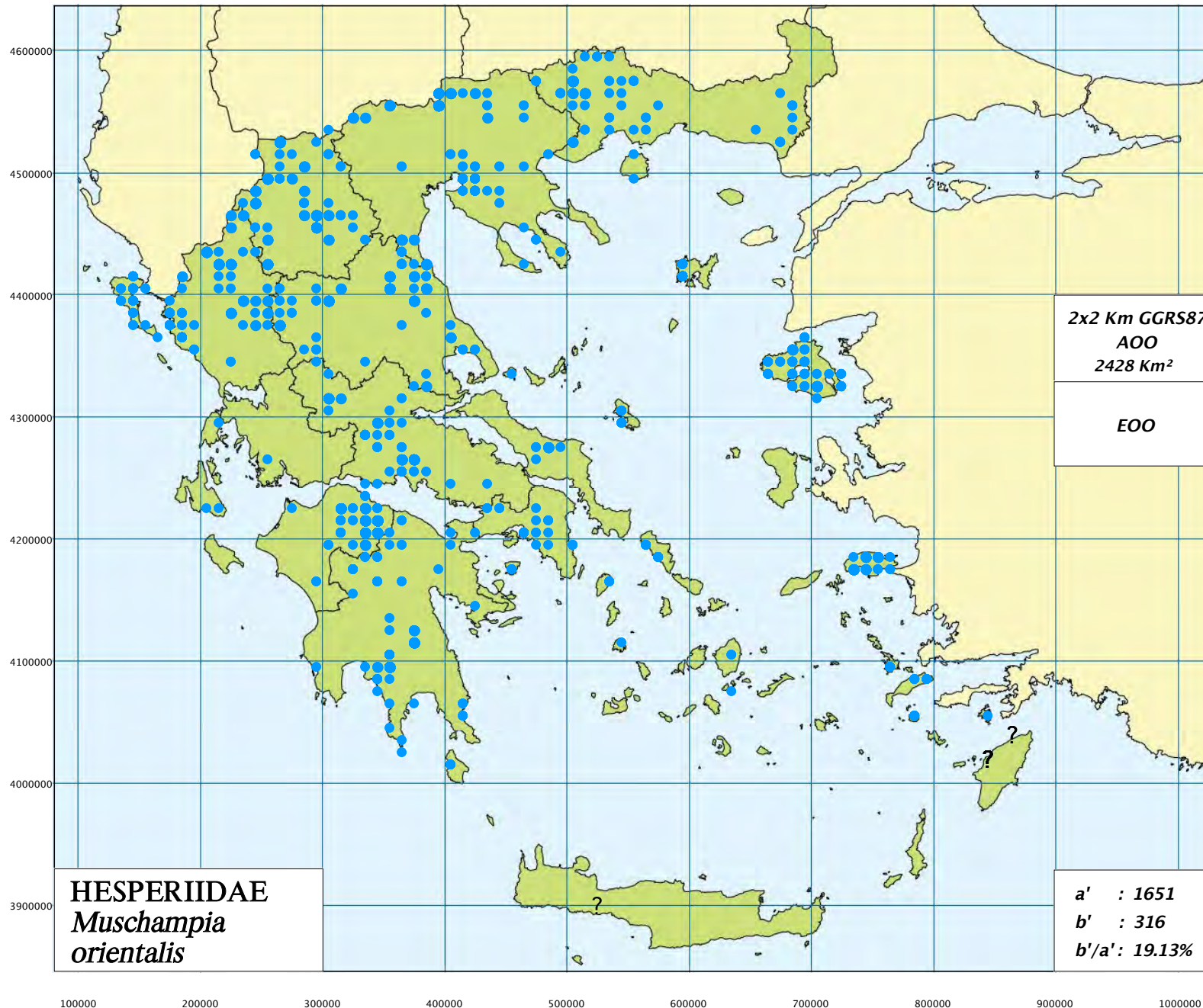




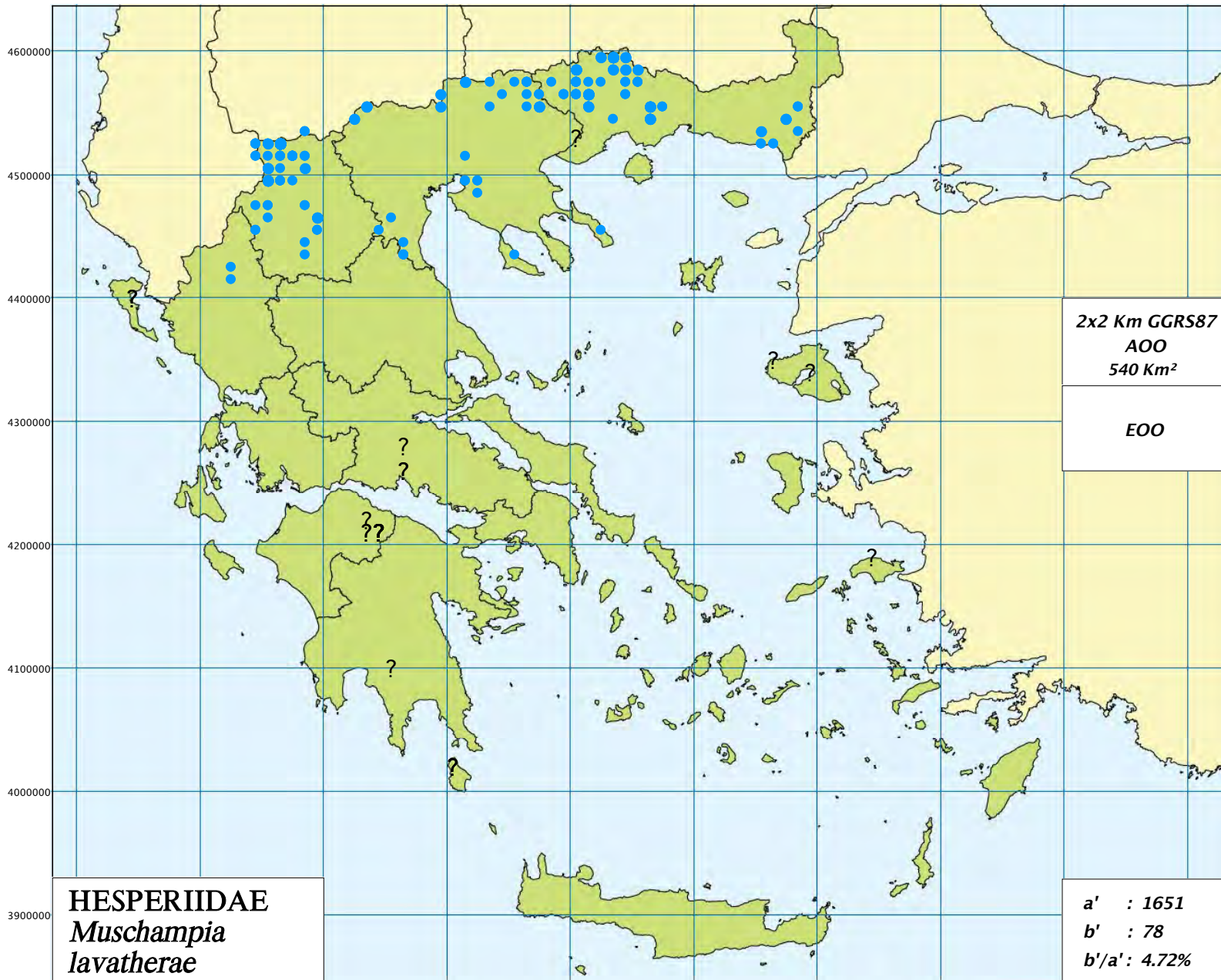


<https://www.pamperis.gr/PHOTOGRAPHS/Carcharodus.html>

Αμφίβολη αναγνώριση /
Identification Uncertain

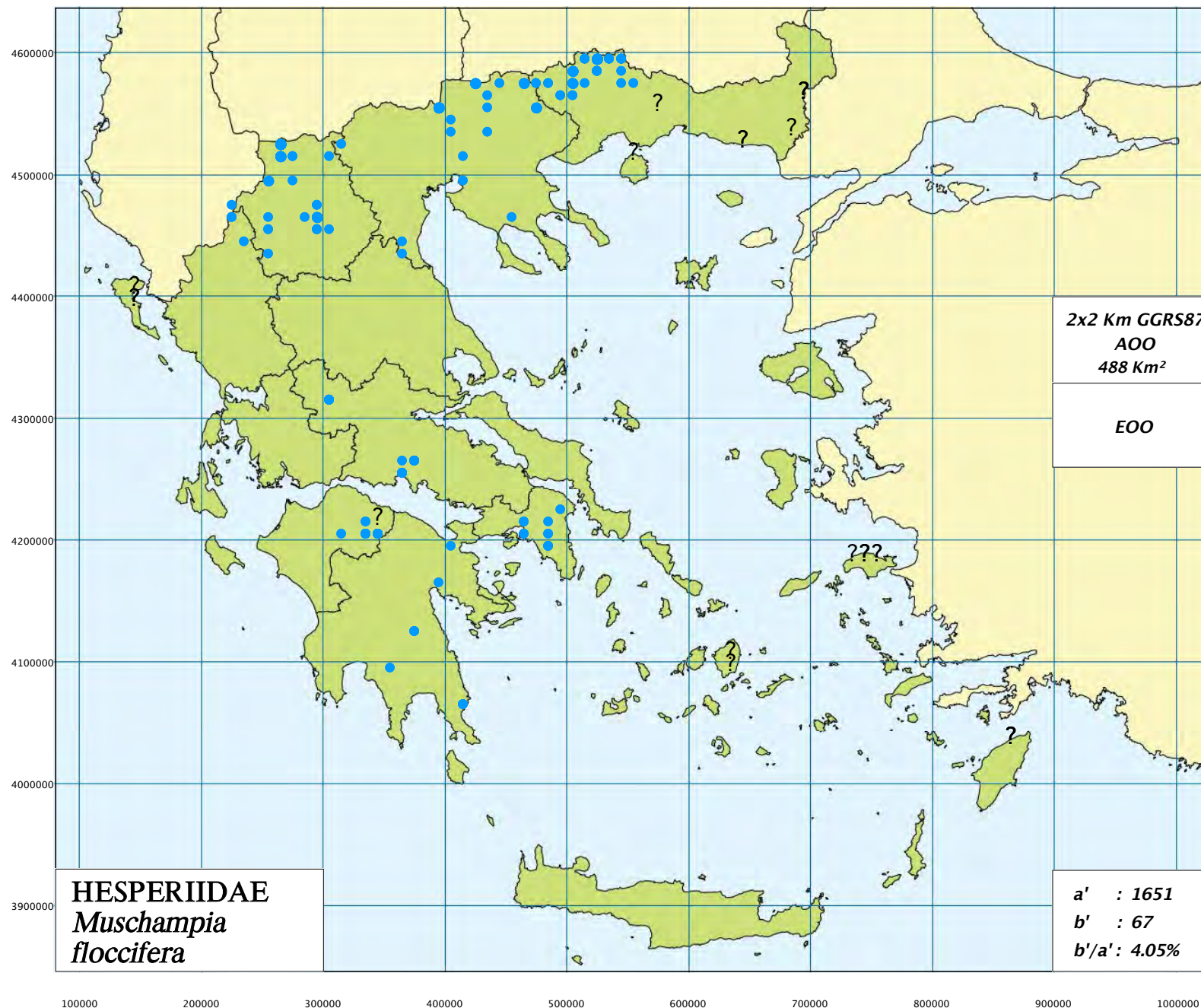


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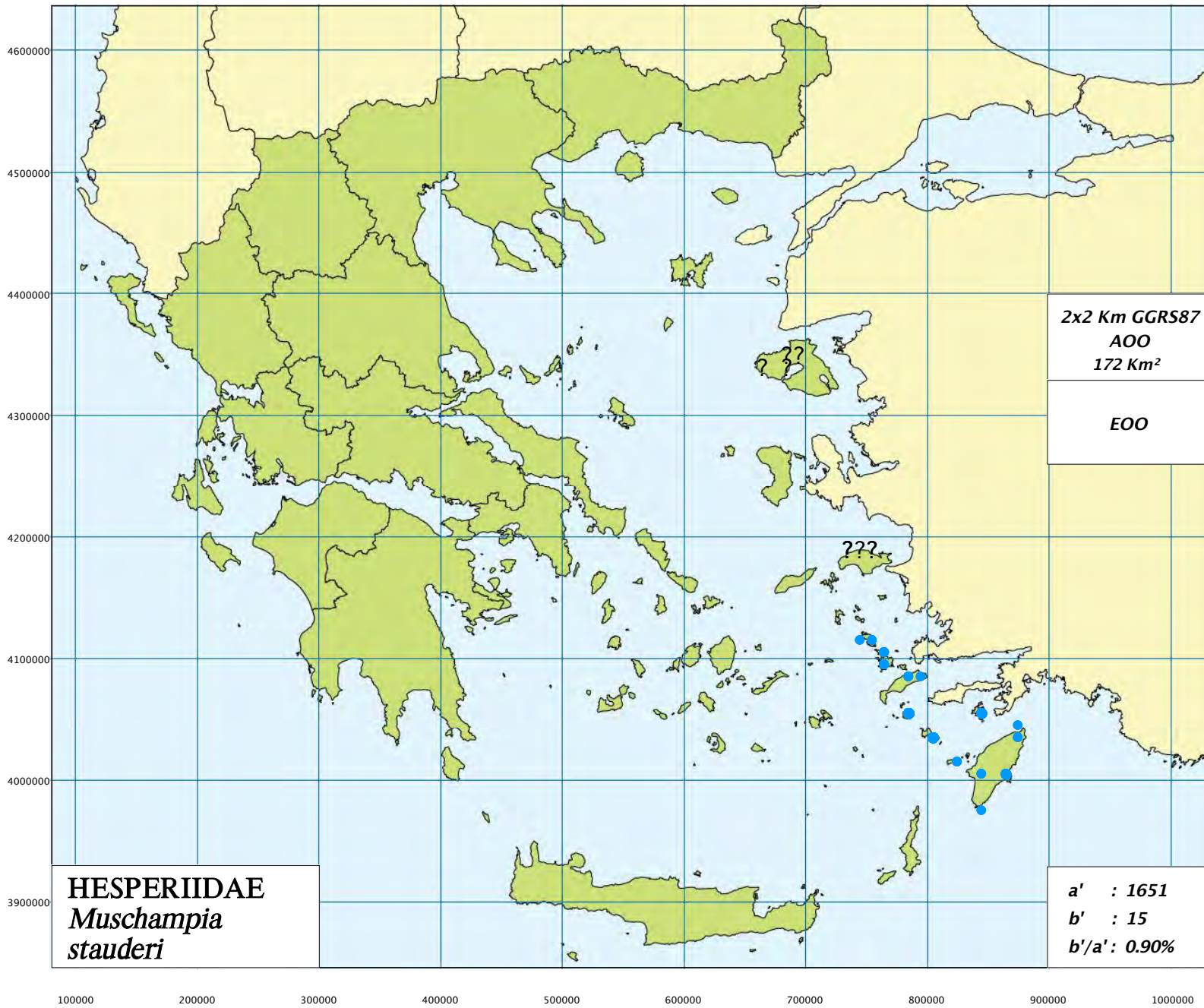


<https://www.pamperis.gr/PHOTOGRAPHS/Carcharodus.html>

Αμφίβολη αναγνώριση /
Identification Uncertain



<https://www.pamperis.gr/PHOTOGRAPHS/Carcharodus.html>



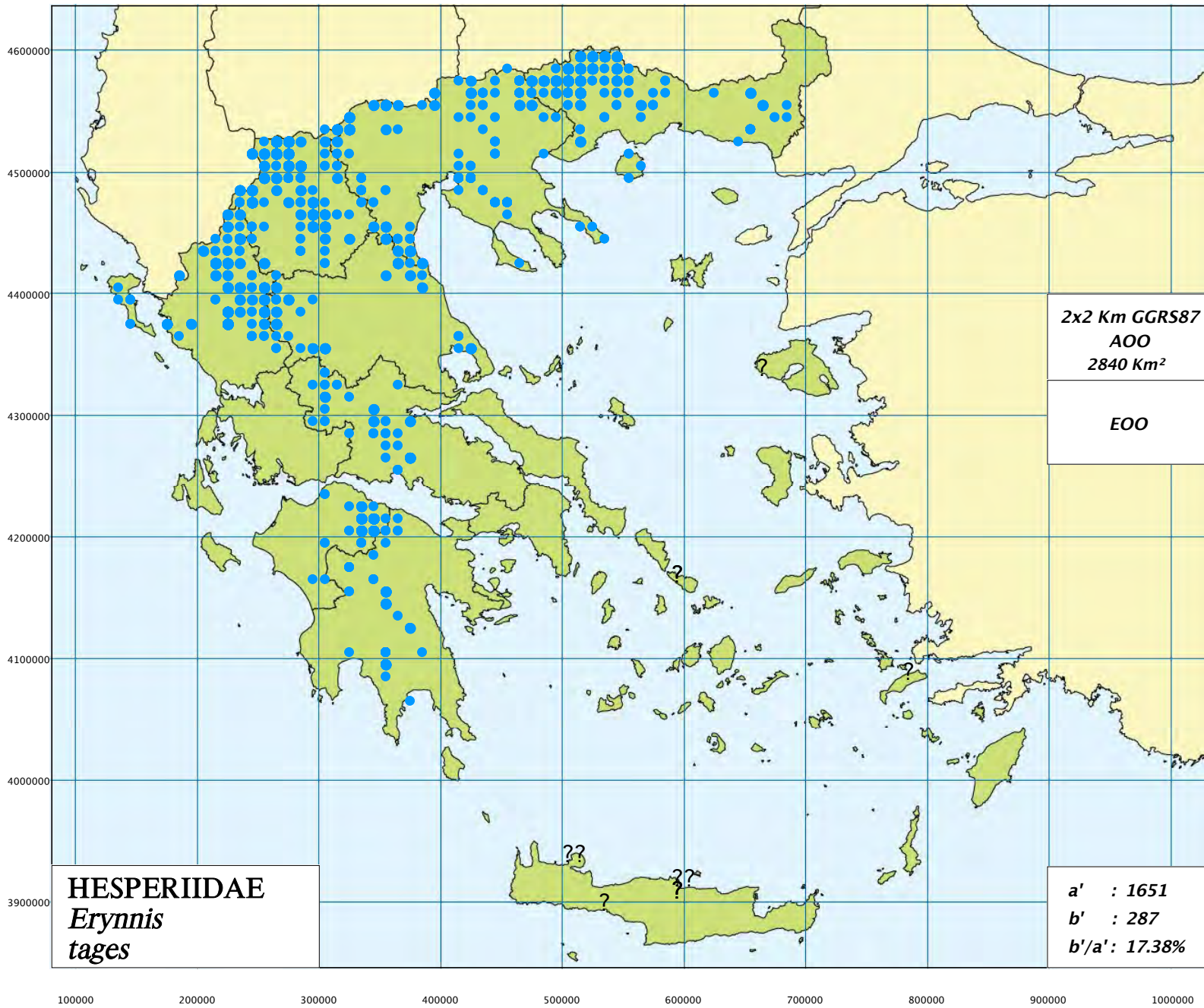
2x2 Km GGRS87
 AOO
 172 Km²

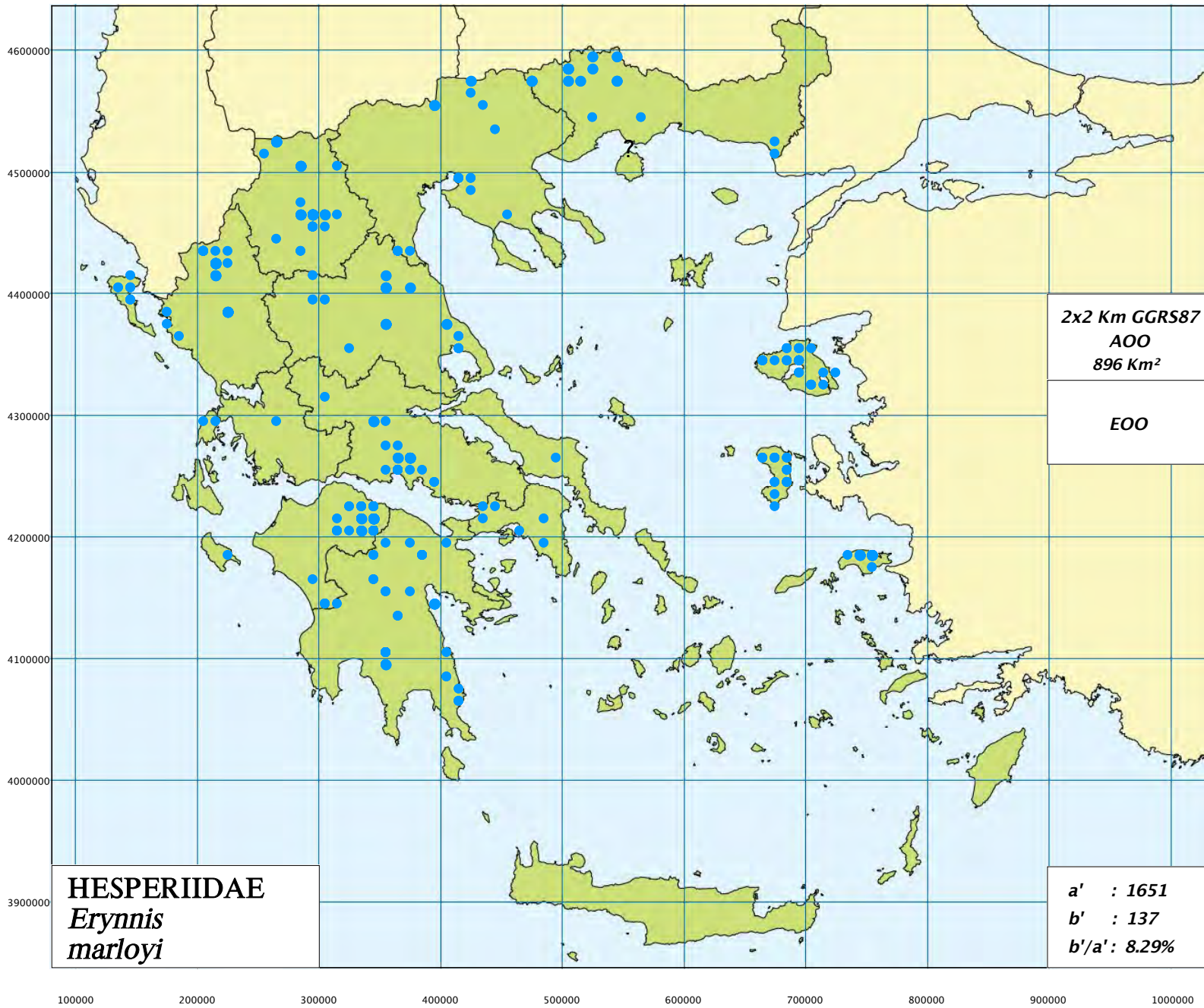
EOO

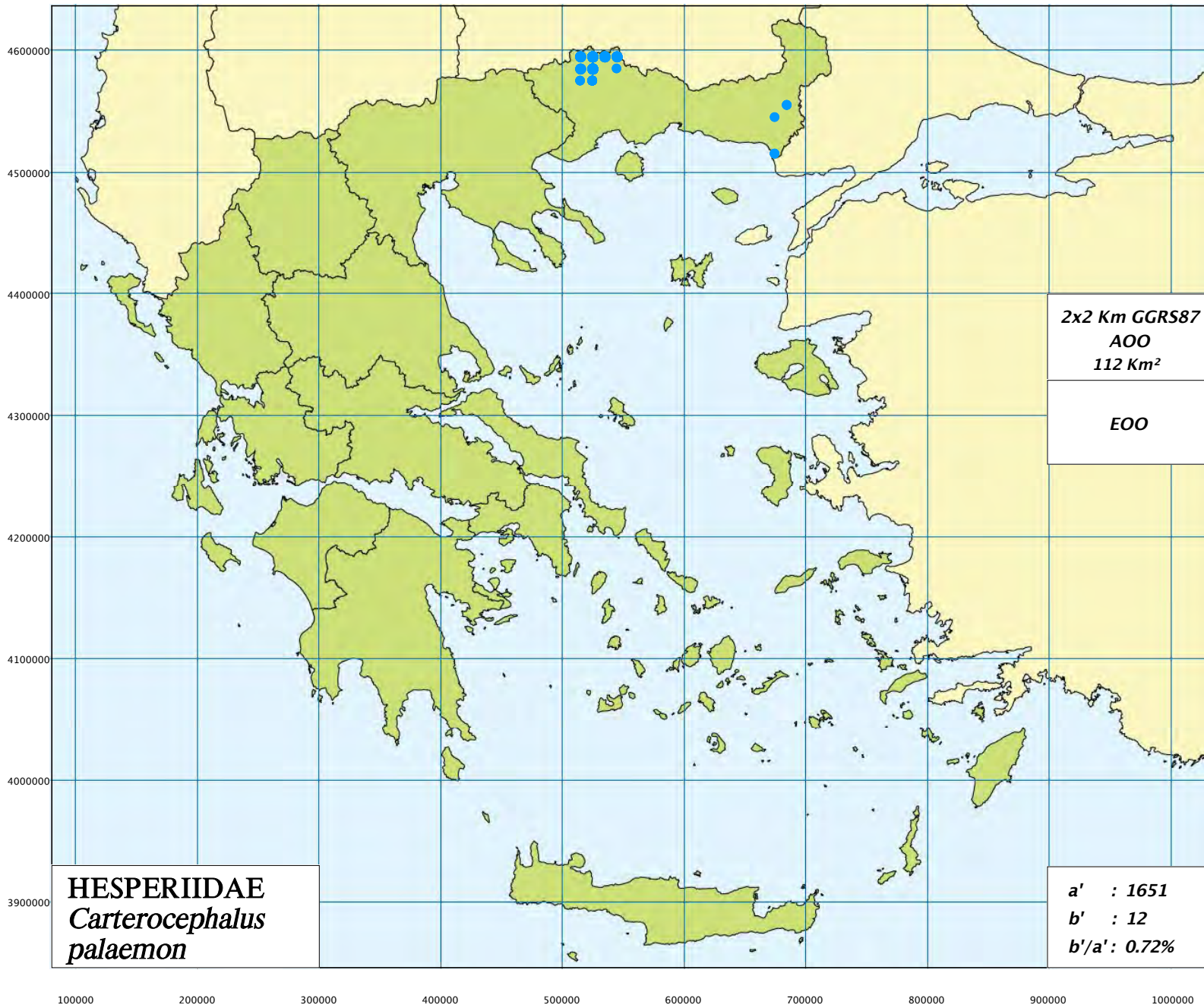
HESPERIIDAE
Muschampia
stauderi

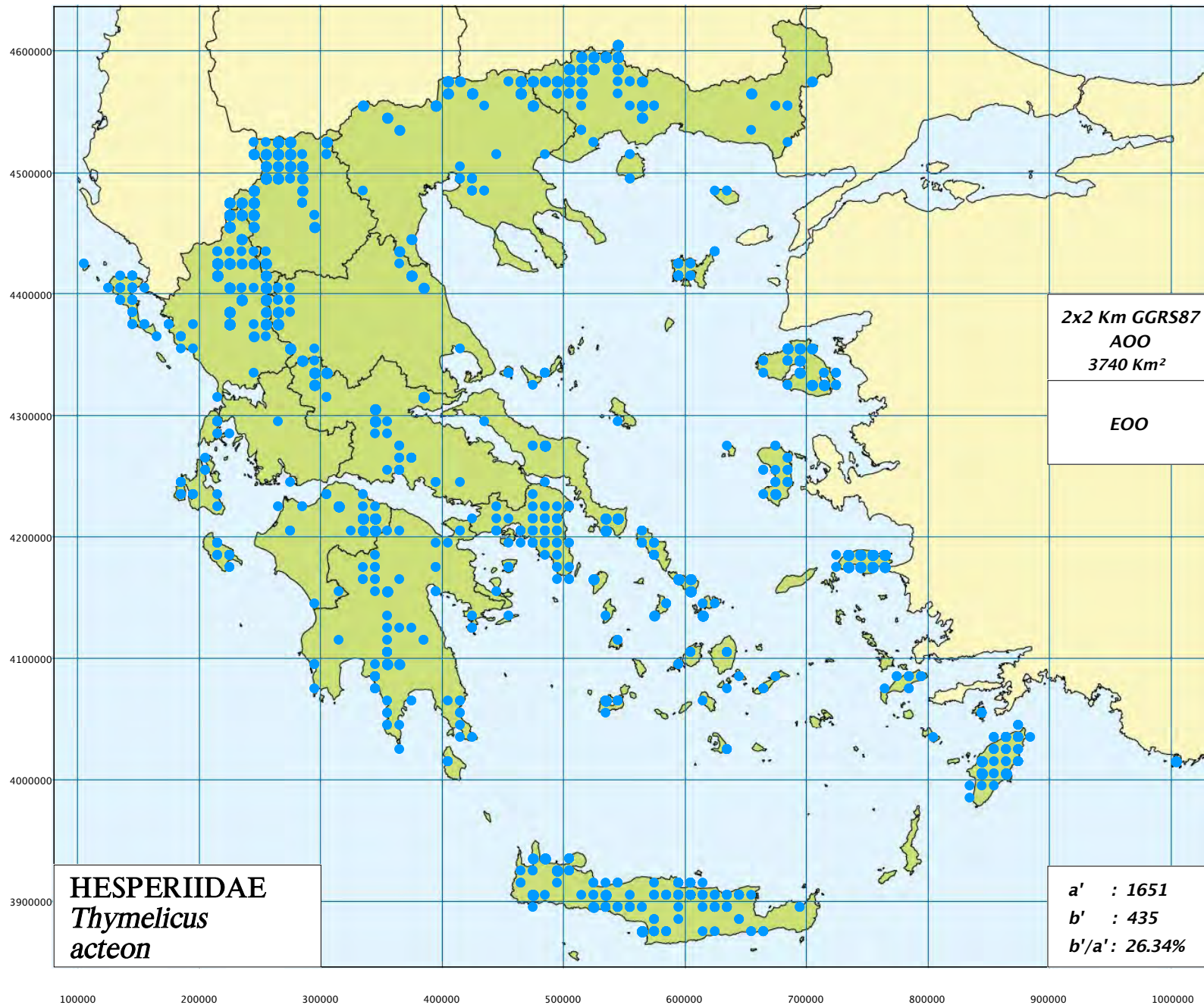
a' : 1651
b' : 15
b'/a' : 0.90%

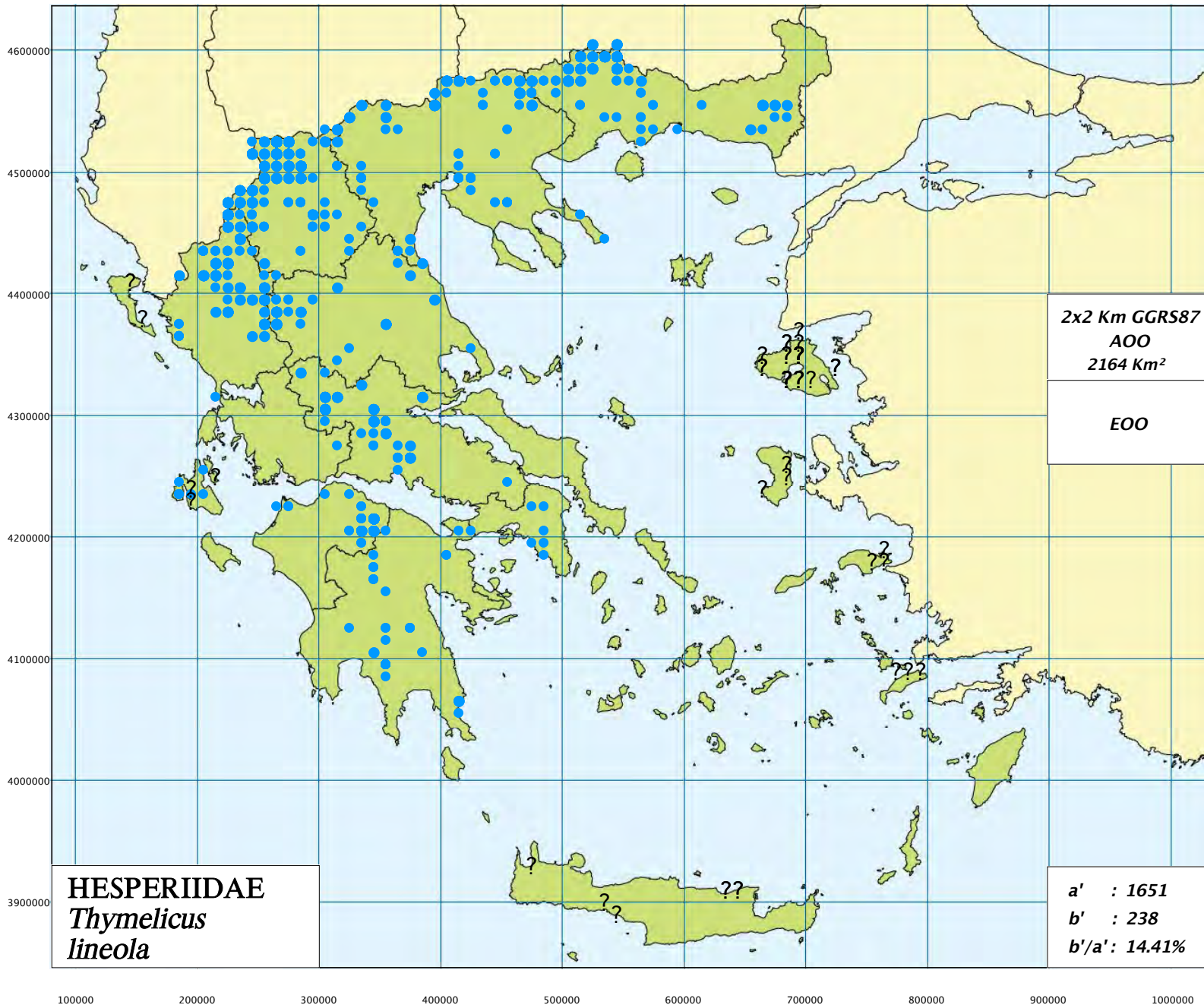
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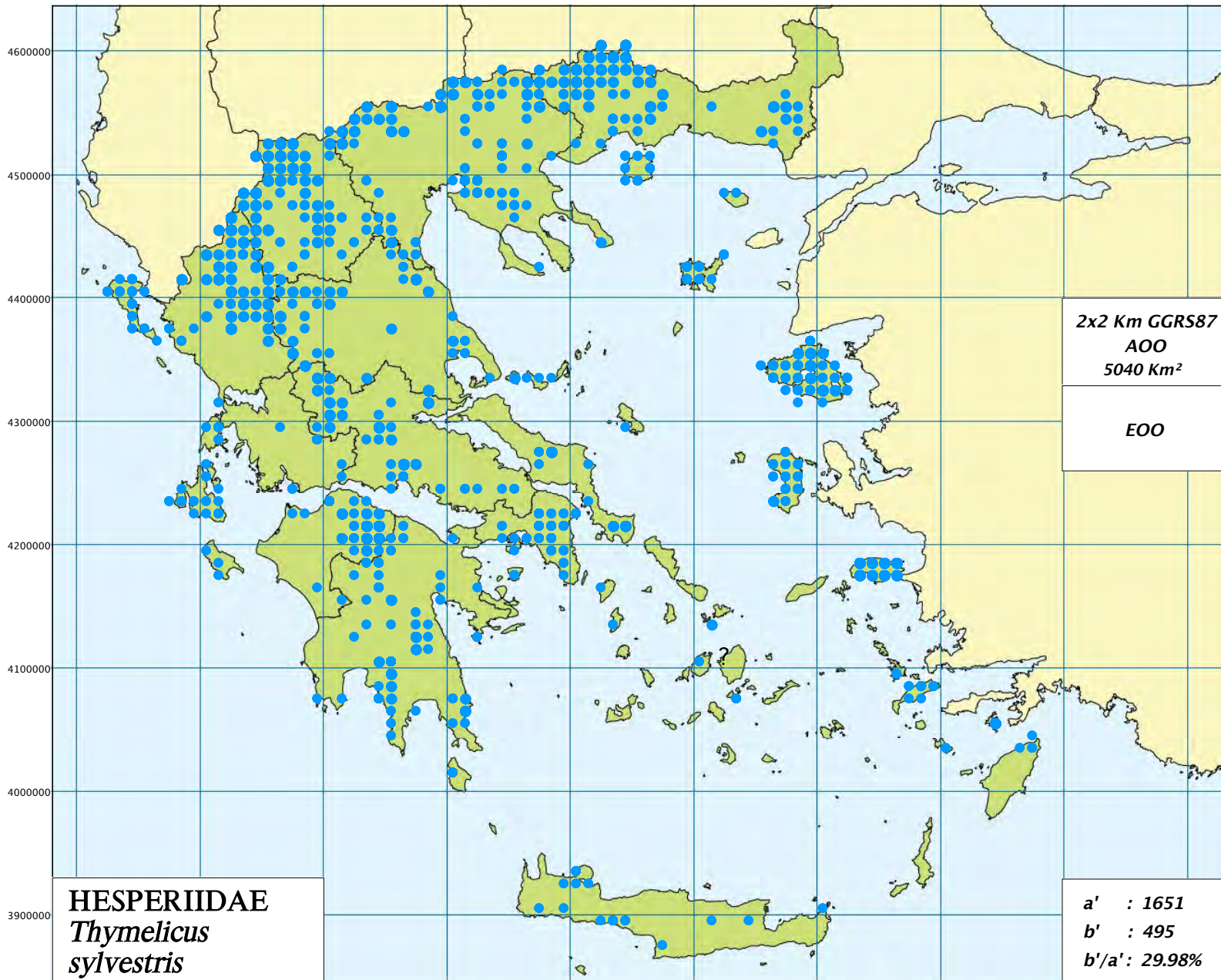






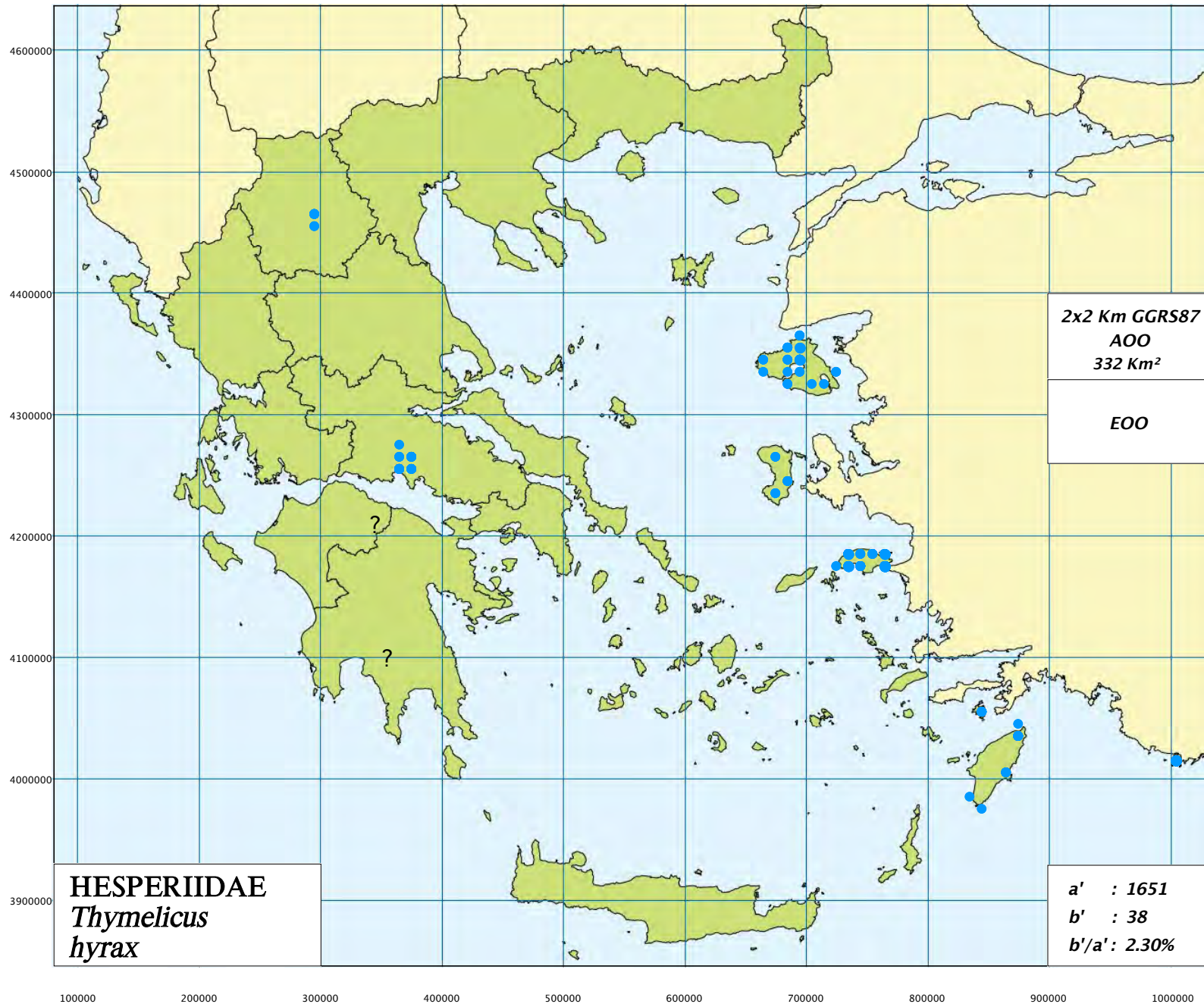


<https://www.pamperis.gr/PHOTOGRAPHS/Thymelicus.html>

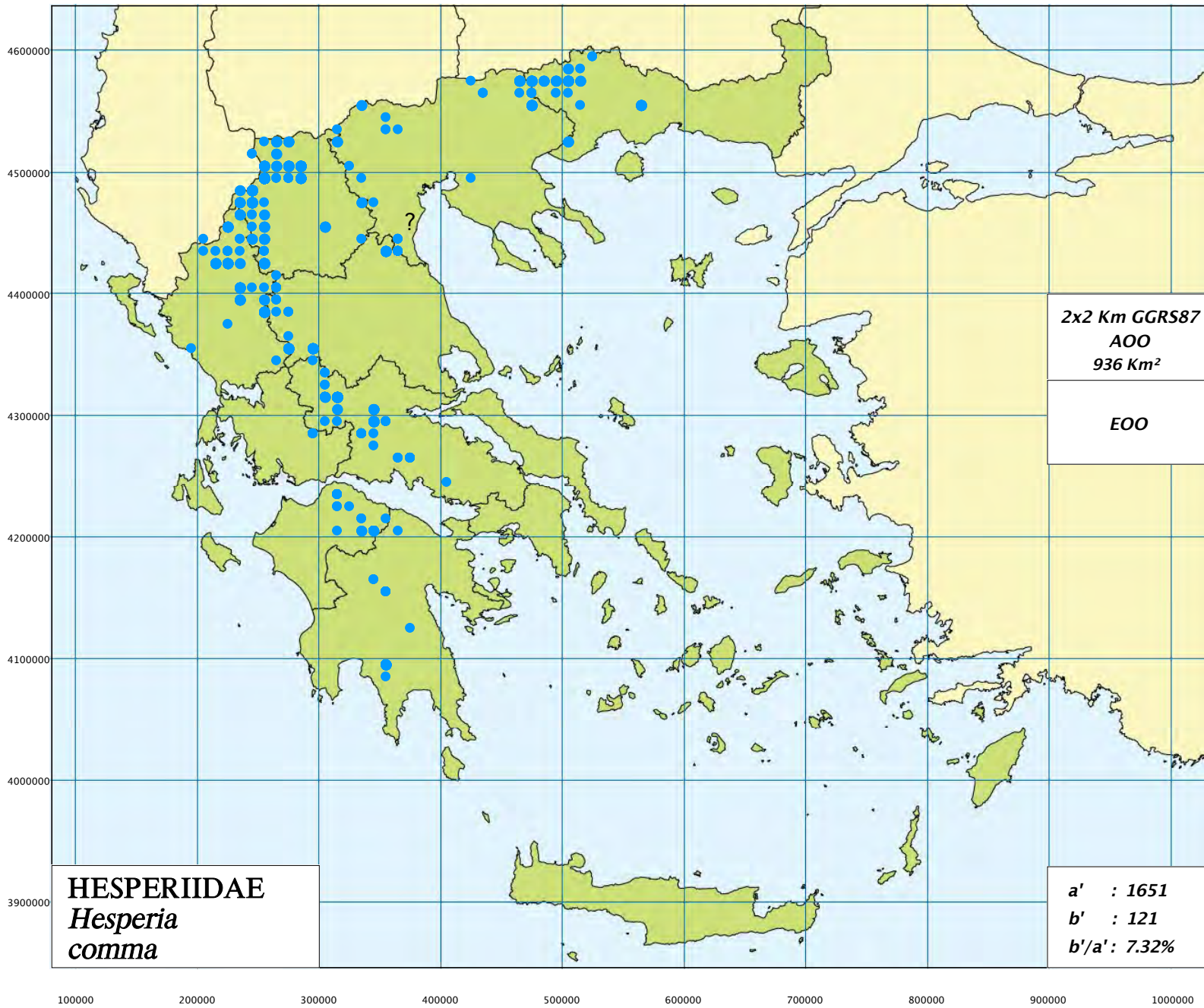


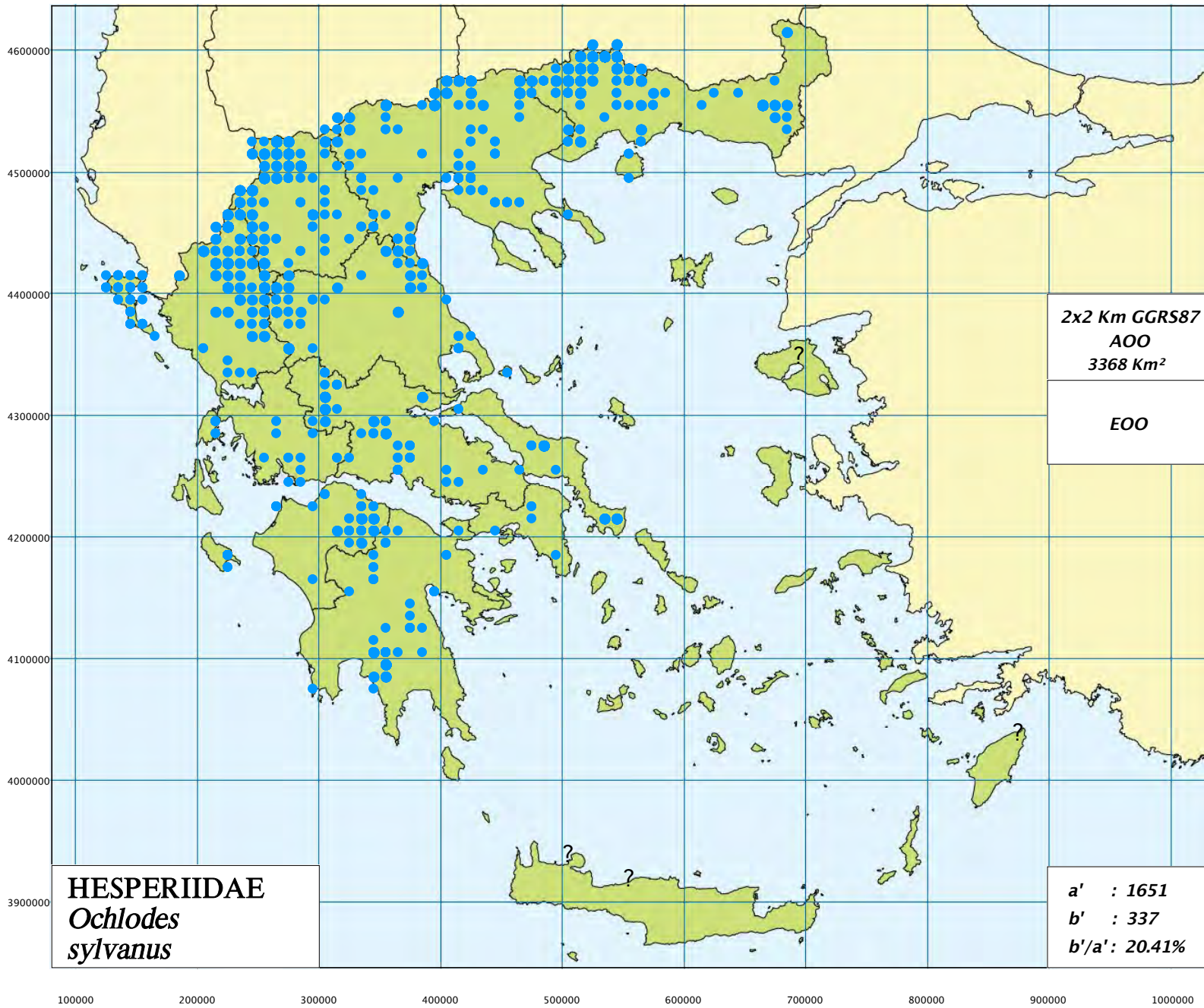
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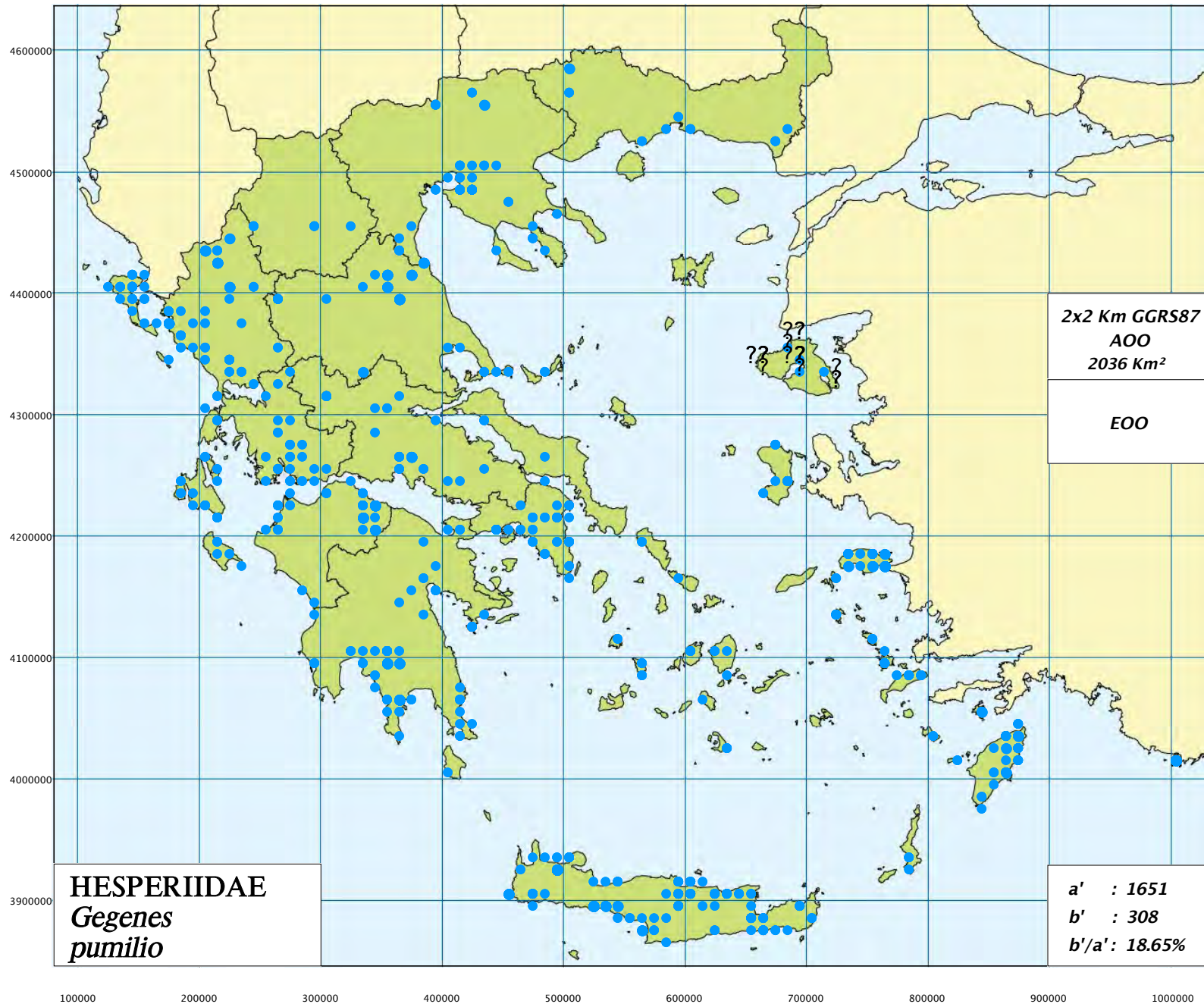
<https://www.pamperis.gr/PHOTOGRAPHS/Thymelicus.html>



<https://www.pamperis.gr/PHOTOGRAPHS/Thymelicus.html>







https://www.pamperis.gr/PHOTOGRAPHS/Gegenes_pumilio_nostrodamus_complex.html

