AIISG NEWSLETTER

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AIISG
IUCN SSC
Atlantic Islands Invertebrate Specialist Group
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HI AIISG MEMBERS

We are pleased to share the second AIISG newsletter, featuring updates on invertebrate conservation and research across the Atlantic islands.

In this issue, Yeray Monasterio León *et al.* discuss the conservation status of *Pieris cheiranthi* from Tenerife, Felipe Arvelo *et al.* highlight the vulnerability of freshwater beetles in the Canary Islands, and Yusdiel Torres-Cambas presents recovery efforts for Cuban damselflies. Paulo Borges and Mário Boieiro explore indigenous arthropods in native and exotic forests of the Azores, while Ruth Neessen, Mário Boieiro and Carla Rego focus on endemic species from the Desertas Islands, including the recovery of the Desertas wolf spider and the description of the new ground beetle *Orthomus bedelianus isambertoi* from Bugio.

Kees and Ingrid Margry report recent land snail discoveries on La Gomera (Canary Islands), António Franquinho presents two new publications on Hemiptera and Hymenoptera from Madeira and Macaronesia, and Paulo Borges highlights the green listing of four endemic Azorean arthropods.

We hope you enjoy this second newsletter edition of 2025.

Best wishes,

Vicky, Paulo, Lena and Dinarte

POSSIBLE EXTINCTION OF *PIERIS CHEIRANTHI* IN TENERIFE AND URGENT ACTION NEEDED TO PROTECT THE LAST STRONGHOLD IN LA PALMA

By Yeray Monasterio León, Ruth Escobés & Martin Wiemers

The Canary Islands harbour one of Europe's and Spain's most distinctive and endangered endemic butterflies: Pieris cheiranthi, a Pierid closely tied to the laurel forest and its transition habitats. Recent work by the Asociación Española para la Protección de las Mariposas y su Medio (ZERYNTHIA) has revealed a worrying pattern: after decades of decline, the Tenerife subspecies *P. c. cheiranthi* may now be on the verge of extinction. At the same time, the population of La Palma, *P. c. benchoavensis*, could represent the last surviving stronghold of this Macaronesian lineage.

Pieris cheiranthi (Figure 1) is currently known only from Tenerife and La Palma, following the confirmed disappearance of the species from La Gomera (last record in 1975). Its sister species, Pieris wollastoni from Madeira, is already listed as Extinct on the IUCN Red List. The latest global assessment (2025) categorises *P. cheiranthi* as Endangered, reflecting the loss of entire island populations and a drastic reduction in area of occupancy.

In Tenerife, the situation has deteriorated sharply in recent years. The last documented individuals supported by photographic evidence were observed in May 2023. In response, ZERYNTHIA implemented intensive, standardised surveys in July and October 2025 under the Spanish national project "Fauna terrestre y aves marinas (especies autóctonas y exóticas invasoras): mejora del conocimiento del estado de conservación", funded within the Recovery, Transformation and Resilience Plan (PRTR). Despite revisiting historical strongholds and formerly abundant sites, no adults, larvae or eggs were found (Figure 2). Considering the increased search effort and the absence of fresh signs, the

probability that *P. c. cheiranthi* is now extremely rare or already extinct on the island is alarmingly high.

Available evidence suggests that the collapse of the Tenerife population has been driven by a combination of interacting pressures: the diversion of reproduction towards *Tropaeolum majus* in exposed habitats, the exceptionally high incidence of parasitoids acting on larvae and pupae, and the exceptional drought that has affected the Canary Islands in recent years, altering the microclimate of laurel forest ravines. In addition, native Crambe populations—essential larval host plants—have been drastically reduced over recent decades due to the clearing of road verges and tracks, as well as the widespread canalisation of watercourses, which prevents free-flowing humidity from reaching most ravines and severely limits the conditions required for these plants to grow. Together, these factors appear to have formed a lethal combination capable of triggering the abrupt population collapse now observed.

In contrast, the subspecies *P. c. benchoavensis* persists in La Palma, where it is associated with well-preserved laurel forest ravines and remnant populations of *Crambe* spp. Nonetheless, its situation is far from secure. The distribution and size of existing nuclei are poorly known, and the same threats documented in Tenerife could act in the near future. Crucially, *Tropaeolum majus* is not yet widely established in La Palma, offering a narrow window of opportunity to prevent the formation of ecological traps similar to those that have affected the Tenerife population.

In light of these findings, ZERYNTHIA is calling for an urgent, coordinated conservation response. Key priorities include rapid, standardised surveys to confirm the current status of *P. c. cheiranthi* in Tenerife; a detailed assessment of Crambe populations and invasive plants in both islands; and the design of a targeted monitoring scheme involving park rangers, technical staff and trained volunteers (Figure 3). In La Palma, ZERYNTHIA recommends the urgent eradication of *Tropaeolum majus*, combined with active reinforcement of *Crambe* stands through nursery-grown plants.

“In recent months we have learned more about the ecology of this butterfly than in many years of study. We now have a clear understanding of the priorities and the type of actions that must be implemented to stabilise the remaining population in La Palma as far as possible. However, the response of public administrations must match the scale of this emergency and provide the resources—above all, financial—needed to act in time.”

Ex-situ conservation is also considered essential. In La Palma, the establishment of a public breeding centre is proposed as a highly urgent measure to secure a genetically representative safety population of P. c. benchoavensis and to support future reinforcement or reintroduction actions if catastrophic events occur. Should any surviving individuals be detected in Tenerife, an emergency ex-situ programme would be necessary immediately to preserve what remains of this unique lineage.

ZERYNTHIA has already held meetings with the Government of the Canary Islands, urging an immediate reaction to this potential extinction. If a few individuals of *P. c. cheiranthi* persist in remote ravines, their survival window may be extremely narrow—possibly a matter of months. Losing the Tenerife lineage would mean the irreversible disappearance of a genetically distinct evolutionary line, leaving La Palma as the sole remaining repository of this singular group. This alarming scenario was also highlighted during the workshop “Support the Implementation of Conservation Plans for Threatened Pollinator Species – From Plans to Action: Operational Tools for EU Pollinator Recovery”, held in Brussels on 20 November 2025,

where *P. cheiranthi* was discussed within the framework of the "Laurisilva Pollinator Action Plan", published in 2023, drafted to safeguard endemic pollinators of this unique habitat.

"If the Tenerife lineage has been lost, La Palma may hold the last living population of this ancient Macaronesian group — protecting it is no longer optional, but urgent."

Through its fieldwork, technical reports and policy advocacy, ZERYNTHIA aims to support regional and national authorities in recognising Pieris cheiranthi as a species in a state of conservation emergency. Securing the last stronghold in La Palma, while verifying and documenting the situation in Tenerife, will be crucial to ensure that one of Europe's most remarkable island butterflies is not added to the growing list of extinct insular species.


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"ZERYNTHIA calls for urgent, coordinated conservation action, including standardised surveys of P. c. cheiranthi in Tenerife, assessment of Crambe populations and invasive plants on both islands, targeted monitoring with trained personnel, and in La Palma the eradication of Tropaeolum majus alongside reinforcement of Crambe populations."

CRITICALLY ENDANGERED BEETLES HIGHLIGHT FRAGILITY OF CANARY ISLANDS' STREAMS

By Felipe Rodríguez Arvelo, Carlos Zaragoza Trello and Carlos Ruiz Carreira


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Freshwater ecosystems cover less than 1% of the Earth's surface, yet they host an extraordinary amount of life, including around 6% of all described species. Despite their richness, they are among the most threatened habitats. In fact, about 40% of critically endangered species live in freshwater. On oceanic islands like the Canary Islands, these ecosystems are especially fragile: decades of groundwater extraction have dried many springs and streams, and even the remaining waters often suffer from severe summer droughts. This has brought many endemic aquatic species close to extinction.

In this context, the research team for the project BioTER Artrópodos conducted a systematic survey (Figure 4) of all historical sites of two endemic diving beetles: *Meladema imbricata* and *Hydroporus compunctus*.

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Meladema imbricata lives in cold, permanent mountain streams. In the past, it was found on six different streams in La Palma, La Gomera, and Tenerife. But in recent years, it has been observed only in one well-preserved stream in southern Tenerife—a finding confirmed again during the project's fieldwork (Figure 5). Another threat to this species is hybridisation with the related *Meladema coriacea.* Previous studies have documented hybridisation with this species, which is better adapted to temporary water bodies and appears to be favoured under current environmental changes. In this context, we conducted a genetic study to assess the impact of this potential threat on the species.

Hydroporus compunctus is even more specialised. It lives in thin layers of clear, cold water flowing over steep rock surfaces in high-elevation seeps and small streams. Historically, it occurred in five localities on the same three islands. However, the last confirmed observation dates from 2009, and our recent surveys did not find it at any of its historical locations.

Both species are currently listed as Critically Endangered on the IUCN Red List, based on assessments from 1996 (*Hydroporus compunctus* under the name *Hydrotarsus compunctus*). In January 2026, both beetles—along with 14 other species of flies, grasshoppers and bush crickets—will be reassessed during a workshop organised by the Center for Species Survival Macaronesia, bringing together experts to update their conservation status.

"The research team for the project BioTER Artrópodos conducted a systematic survey of all historical sites of two endemic diving beetles: Melademe imbricata and Hydroporus compunctus."

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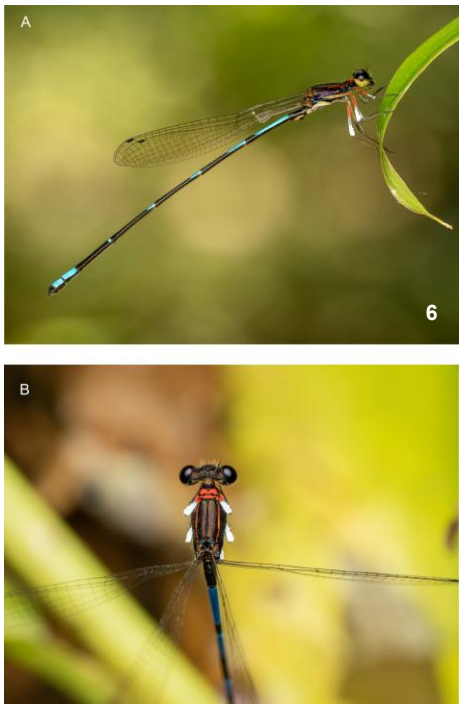
Sýkora, V., García-Vázquez, D., Sánchez-Fernández, D., & Ribera, I. (2017). Range expansion and ancestral niche reconstruction in the Mediterranean diving beetle genus *Meladema* (Coleoptera, Dytiscidae). Zoologica Scripta, 46(4), 445-458.

RECOVERING THE CUBAN NATIONAL DAMSELFLY

By Yusdiel Torres-Cambas



The Blue-and-Orange Threadtail *Protoneura caligata* is a Cuban endemic damselfly listed as Endangered on the IUCN Red List since 2006 (Paulson & von Ellenrieder, 2006). It is currently known from a small number of localities in the Guamuhaya mountains of central Cuba, where it inhabits forested headwater streams and is severely threatened by riparian deforestation (Lorenzo-Carballa et al., 2016; Torres-Cambas et al., 2015). The male's body colour resembles the colours of the Cuban flag (white, red and blue), which gives the species strong potential as a national conservation symbol (Figure 1).

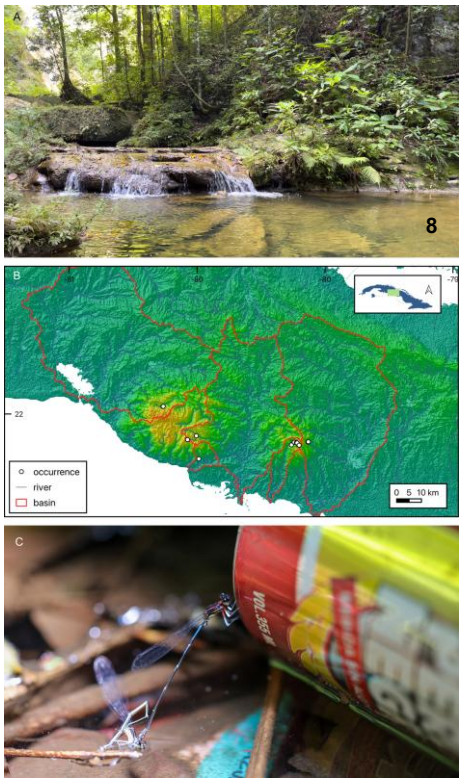
Our project "Recovering the Cuban national damselfly", supported by an IUCN SSC Internal Grant combines field surveys, reassessment work and outreach through art, photography and film to (1) improve knowledge on the species and its habitats and (2) increase the visibility of freshwater invertebrate conservation in Cuba.

Field survey and work in Cuba

The main field survey was carried out in central Cuba by a team composed of biologists Yusdiel Torres-Cambas, Alejandro Catalá, Marian Gallardo and Karen Gallardo, together with videographer Raúl Henríquez (Figure 2A). Fieldwork extended over 16 days (24 July–8 August) within a longer campaign of about 20 days across the Guamuhaya mountains. During this period, we visited several forested headwater streams, where we systematically searched along stream reaches for adult P. caligata, recorded microhabitat characteristics (including substrate type, flow conditions, shading and macrophyte cover), documented co-occurring odonate species and photographed behaviour and perching sites. At each locality, we also noted signs of disturbance such as waste, bank erosion and nearby infrastructure. A short video reel summarising parts of the fieldwork is available on Instagram: https://instagram.com/p/DPPc3B9DWOf/?utm_source=qr.

In parallel with the biological survey, we conducted a scientific survey to assess public perception and knowledge of odonates and freshwater ecosystems, leveraging contacts with local communities and visitors during field activities. After completing the fieldwork, we presented the project and preliminary results at the National Natural History Museum in Havana, using photographs and short video material from the survey to introduce P. caligata and its habitats to a wider Cuban audience.

What we learned



Although data analysis is still ongoing, some patterns are emerging. Protoneura caligata is strongly associated with narrow, well-shaded headwater streams that have clear water and well-preserved riparian forest, confirming its dependence on relatively undisturbed forested habitats in the Guamuhaya mountains of central Cuba (Figure 8A). During our main survey, we recorded 77 individuals (40 males, 77 females) in at least four different river drainage basins, indicating that the species is present across several catchments but remains locally uncommon, especially compared with the more widely distributed Cuban endemic *Protoneura capillaris* (Figure 8B).

At several sites, we documented waste and localised disturbance associated with tourism and recreational use of streams, suggesting that tourism may represent an emerging threat that should be monitored and quantified in addition to the ongoing impacts of riparian deforestation (Figure 8C). Taken together, these observations are consistent with the current Endangered status of P. caligata and emphasise the importance of maintaining forest cover and water quality in headwater streams, as well as the role of local protected areas, which still provide some of the best remaining habitat for this species.

Science meets art: creating a visual identity

From the beginning, we aimed for this project to extend beyond a conventional field survey. Because Protoneura caligata is visually distinctive, we identified it as a suitable species around which to build a clear visual identity, presenting it as a “national damselfly” for Cuba in parallel with the Cuban Trogon (*Priotelus temnurus),* the national bird. To support this, we collaborated with artists from different backgrounds. Eva Jaramillo, an illustrator from Colombia, produced a detailed illustration of *P. caligata* that was used for our project T-shirt and other visual materials (Figure 9A-C), while Denis Gallardo, a painter from Santiago de Cuba, designed the project logo and several works inspired by odonates in general and particularly *P. caliagta* (Figure 9D). These artistic contributions, together with macro photographs and field images obtained during the surveys (Figure 6), form an integral part of our outreach strategy and facilitate communication about this little-known species to a broad, non-specialist audience.

The exhibition at IGB

We are currently preparing an exhibition titled “En busca de la libélula nacional cubana” (In search of Cuba’s National Damselfly) at the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) in Germany. The exhibition will present scientific photography of *P. caligata* and other Cuban odonates, together with fieldwork images that document survey conditions in remote streams, original artworks

produced by our collaborating artists (Eva and Denis), and concise explanatory texts describing the species, its habitats, main threats and conservation needs.

Filming a documentary: science and context

In parallel with the fieldwork and the exhibition, we are producing a documentary, titled “In search of the Cuban national damselfly.” The film documents our survey work for *P. caligata* in Cuba using a video-blog format that combines scenes from field activities, observations of Cuban rivers and forests, and the practical challenges of conducting conservation research under current economic conditions, including difficulties in reaching remote sites, transport limitations and frequent power cuts. We intend to present a realistic account of both the scientific process and the broader context in which conservation in Cuba takes place. The documentary also features interviews with international odonate specialists, providing historical context and a broader perspective on dragonfly and damselfly conservation in the Caribbean.

Next steps

Our immediate priorities are to finalise the analysis of the field data to refine the species’ distribution and habitat requirements, and to prepare concise conservation recommendations for protected area managers and environmental authorities in Cuba. In parallel, we will continue to share the exhibition and the documentary with Cuban and international audiences, including schools and universities, and we plan to present both the exhibition and the film in the National Museum of Natural History, Havana, in spring 2026. Overall, we expect that this combination of fieldwork, visual communication and artistic collaboration will help to support the long-term conservation of P. caligata and its mountain stream habitats.

Acknowledgements

This work was supported by the IUCN Species Survival Commission through an SSC Internal Grant, and by the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) through the Programme Area Biodiversity in the Anthropocene, which provided funding for field surveys, outreach activities, and the reassessment of Protoneura caligata. We also acknowledge financial support from the Dragonfly Society of the Americas through a Research Grant, which contributed to the project's fieldwork. We are particularly grateful to the artists Eva Jaramillo and Denis Gallardo, whose illustrations, logo design, and paintings played a key role in developing the project's visual identity and communicating the conservation importance of Cuban odonates to broader audiences.

"An IUCN-supported project confirms that the Endangered Cuban endemic Protoneura caligata is restricted to well-preserved forested headwater streams, with ongoing deforestation and tourism as key threats, and combines field surveys with art-based outreach to promote its long-term conservation.”

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BEYOND NATIVE HABITATS: MID-ELEVATION INDIGENOUS ARTHROPODS PERSIST IN AZOREAN EXOTIC FORESTS.

By Paulo A.V. Borges

A new study in *Global Ecology and Conservation* shows that several indigenous insects and spiders on Terceira Island (Azores) continue to persist in exotic forests dominated by non-native trees. Using standardised SLAM (Sea, Land and Air Malaise) and pitfall traps across 20 forest plots (10 native, 10 exotic), the team recorded 85 indigenous species, 65 of which occurred at least once in exotic stands. Elevation emerged as the key driver of persistence: species historically associated with mid-elevation belts (≈300–500 m a.s.l.) were more likely to occur and be relatively abundant in exotic forests, whereas high-elevation specialists (>500 m) were largely absent. Endemic species generally showed lower relative abundance in exotic forests than native non-endemics.

Why elevation matters: the Azores' native laurel forests once extended to lower altitudes but are now highly fragmented and mostly restricted to higher elevations (Figure 10). Today's exotic stands are concentrated at mid and low elevations; species with historical distributions in those bands appear able to persist there, at least transiently, whereas high-elevation taxa face unsuitable conditions below their native range.

These findings align with earlier work showing that small lowland patches of exotic forest can host rare Azorean endemics and that elevational context structures arthropod communities on islands. At the same time, the study cautions that persistence in altered habitats can reflect an extinction debt—a time-lagged trajectory toward local loss rather than true recovery—especially for elevation-restricted endemics.

Conservation implications. Exotic forests are not substitutes for native habitats, but they can function as transitional refuges and potential stepping stones for restoration in highly transformed landscapes. Many

such stands lie outside protected areas and often on private land; recognising biodiversity-relevant patches (e.g., as micro-reserves or KBAs) and integrating them into restoration planning could accelerate recolonisation where remnant populations persist. This perspective is consistent with current European policy frameworks aimed at restoring degraded ecosystems.

Methods snapshot. The analyses modelled species' abundance differences between habitat types and the probability of occurrence in exotic forests as a function of ecological traits and biogeographic variables. Elevation and spatial occupancy were the strongest predictors; body size, trophic guild, dispersal ability, and vertical stratification were not significant in explaining patterns of persistence.

> *"The results support previous evidence that exotic forest patches can harbour rare island endemics and that elevation shapes arthropod communities, but warn that species persistence in altered habitats may represent an extinction debt rather than genuine recovery."*

Please find the full citation below:

Lhoumeau, S., Oyarzabal, G. & Borges, P.A.V. (2025). Beyond native habitats: Indigenous arthropods adapted to mid-elevations find refuge in exotic forests. Global Ecology and Conservation, 64: e03935 DOI: 10.1016/j.gecco.2025.e03935 (IF2024 3.4; Q1 Ecology).
Link: https://www.sciencedirect.com/science/article/pii/S2351989425005372?via%3Dihub

LAND USE INTENSIFICATION REDUCED THE ABUNDANCE OF SEVERAL NATIVE POLLINATOR SPECIES AND FAVOURED THE SPREAD OF EXOTICS IN TERCEIRA (AZORES)

By Mário Boieiro and Paulo Borges


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Land use changes and intensification are key drivers of global biodiversity loss, and their effects can be particularly harmful in oceanic islands. In a recent study conducted in Terceira (Azores), we found that land-use intensification (particularly due to grazing) led to changes in pollinator assemblages and their interactions with plants (Figure 11).

Despite the lack of significant changes in overall pollinator species richness and abundance across the study land uses (natural vegetation, semi-natural pastures and intensive pastures), we found changes in the abundance of several pollinator species that seem to be related to the degree of land management intensity: several introduced species (*Calliphora vicina, C. vomitoria, Apis mellifera*) were more abundant in pastures, while native species (*Stomorhina lunata, Sphaerophoria scripta*) were more abundant in the natural vegetation areas.

Also, introduced species (particularly the honeybee) were the most dominant flower visitors in intensively managed habitats, replacing native species from key ecological roles. Finally, this study emphasises the

need for conservation measures to protect native pollinator species and pollination sustainability in the Azores, through habitat restoration, a reduction in grazing intensity, and the implementation of pollinator-friendly agri-environmental schemes.

> *"Although overall pollinator species richness and abundance did not differ significantly among land-use types, management intensity influenced species composition: introduced species were more abundant in pastures, whereas native species were more common in areas of natural vegetation."*

References:

Boieiro, M., Ceia-Hasse, A., Oliveira, R., Costa, R., Borges, P.A.V. Does Land Management Intensity Influence Pollinator Assemblages and Plant–Pollinator Interactions in the Lowlands of Terceira Island (Azores)? Land 2025, 14, 2029.

Link: https://doi.org/10.3390/land14102029

A RECENT STUDY REPORTS THE DISCOVERY OF A NEW GROUND BEETLE FROM BUGIO AND PROVIDES AN UPDATED INVENTORY OF THE GROUND BEETLE FAUNA OF THE DESERTAS ISLANDS (MADEIRA ARCHIPELAGO)

By Mário Boieiro and Carla Rego

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The Desertas Islands are a group of three volcanic islands located nearly 20 km southeast of Madeira and classified as a Nature Reserve since 1995. Despite their proximity to Madeira, only a few entomological expeditions have been conducted to these islands. Following a literature review and the study of specimens from two fieldwork campaigns, a recent study (see below) has updated the knowledge on the ground beetles of the Desertas Islands: 33 species and subspecies are known to occur in these islands, including eight taxa endemic to Desertas and six endemic to the Madeira Archipelago.

Philorhizus melanocephalus was recorded for the first time for the Madeira archipelago, and four other taxa were new records for the Desertas Islands: *Apotomus chaudoirii*, *Ocys harpaloides*, *Paradromius insularis oceanicus* and *Syntomus fuscomaculatus*. Most taxa were reported from Deserta Grande (S=30), the largest island, while Ilhéu Chão and Bugio islands have fewer species. Interestingly, a new subspecies - *Orthomus bedelianus isambertoi* Serrano & Boieiro - was described from Bugio, where it seems to have a very restricted distribution (Figure 12). It will be essential to implement a population monitoring program for the endemic taxa to assess whether specific conservation actions are needed to minimise extinction risks.

Please find more information at:

Serrano, A.R., Aguiar, C.A., Cardoso, P., Pereira, F., Castro, C. P. E., Rego, C., Silva, I. & Boieiro, M. (2025). Ground beetles (Coleoptera: Carabidae) of the Desertas Islands (Madeira archipelago, Portugal): description of a new subspecies and faunistic notes. Zootaxa, 5683, 397-416. DOI: 10.11646/zootaxa.5683.3.4 (https://mapress.com/zt/article/view/zootaxa.5683.3.4)

> *"A recent study updated knowledge of ground beetles in the Desertas Islands, recording 33 species and subspecies, including eight Desertas endemics and six Madeira endemics. Several taxa were newly recorded for the islands, one for the Madeira archipelago, and a new subspecies was described from Bugio, highlighting the need for monitoring endemic populations to assess conservation requirements."*

MOLLUSCS ON THE CANARY ISLAND OF LA GOMERA

By Kees Margry and Ingrid Margry-Moonen

Since 2015, we have visited La Gomera 11 times and conducted mollusc research in all seasons. In the early years, our focus was primarily on Vitrinidae. This research led to the discovery of a new species: *Insulivitrina ingridae* Margry, 2016, the first fossil vitrinid snail from the Canary Islands. During a 10-week internship in 2018, our attention focused, among other things, on the consequences of the 2012 major fire. That year, a large part of Garajonay National Park was destroyed by fire. Burned and unburned areas were compared for the presence of snails and slugs. A poster about this research has been published (Margry & de Winter, 2018). In the years that followed, we have increasingly delved into the mollusc species on the island and have now described 11 new species. Sometimes alone, in other cases with one or more co-authors (researchgate.net). Phenomena such as parasitism are also included in our research. For example, the parasitic mite *Riccardoella oudemansi* Thor, 1932 was for the first time identified in the Canary Islands (Margry & Heitmans, 2023). Our goal is to compile all the information into a book about the land and freshwater molluscs of La Gomera. However, it will be some time before this book sees the light of day.

> *"A poster about this research has been published (Margry & de Winter, 2018). In the years that followed, we have increasingly delved into the mollusc species on the island and have now described 11 new species. "*

References:

Margry, C.J.P.J., 2016. *Insulivitrina ingridae* spec. nov., a fossil vitrinid from the Canary Island of La Gomera (Gastropoda, Pulmonata). – Basteria 80 (1-3): 127-131.

Margry, C.J.P.J. & de Winter, A.J., 2018. Preliminary results on the effect of fire on the biodiversity of snails and slugs in Garajonay National Park on the Canary Island of La Gomera, with a special focus on Vitrinidae.

– Poster, presented at the international congress “Forest fires and laurel forest conservation” on November 21-23, 2018, San Sebastian de La Gomera.

Margry, C.J.P.J & Heitmans, W.R.B., 2023. The slug mite *Riccardoella oudemansi* was found on endemic gastropods on the Canary Islands. – Basteria, 87 (2): 162-168.

CONSERVATION SUCCESS: RECOVERY OF THE CRITICALLY ENDANGERED DESERTAS WOLF SPIDER (*HOGNA INGENS*) ON DESERTA GRANDE

By Ruth Neessen


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Hogna ingens is the largest known wolf spider and is found exclusively on Deserta Grande, a small island near Madeira, where it inhabits only the Vale de Castanheira in the north (Figure 13). The total distribution area of the species covers less than one square kilometre.

The species was once widespread throughout the valley, but its population declined in the mid-2000s. Monitoring in 2011 and 2012 revealed that the invasive grass *Phalaris aquatica* was responsible for this decline, as it blocked access to the spiders’ hiding places under rocks. The remaining population retreated to the northern part of the valley, where *P. aquatica* had not spread.

In 2014, *H. ingens* was classified as “Critically Endangered” on the IUCN Red List. The Instituto das Florestas e da Conservação da Natureza (IFCN, Madeira) subsequently undertook chemical and manual control of the invasive grass.

To assess whether these measures were successful and whether the population of *H. ingens* had recovered, I travelled to Deserta Grande in May 2025 with colleagues from the IFCN to monitor both spiders and grass. Preliminary analyses of the monitoring data are encouraging: since 2012, grass cover has decreased by 80% and now occurs only sporadically in the southern part of the valley, while the *H. ingens* population has increased by 992%, once again inhabiting the entire valley.

These results demonstrate a significant recovery of *H. ingens* following targeted management actions against *P. aquatica*. This development highlights the effectiveness of coordinated conservation measures. The next step will be to prepare the data for the IUCN Red List reassessment, where H. ingens is expected to be downlisted.

"The Critically Endangered wolf spider Hogna ingens, restricted to <1 km² on Deserta Grande, has shown a strong recovery following control of the invasive grass Phalaris aquatica, with an 80% reduction in grass cover and a nearly tenfold increase in population, supporting a future IUCN Red List downlisting."

References:

Cardoso, P. (2014). In: *Hogna ingens*. The IUCN Red List of Threatened Species 2014, pp. 43–47. doi: 10.2305/IUCN.UK.2014-2.RLTS.T58048571A58061007.en .

Cardoso, P., M. Bushell and M. Stanley Price (2016). The Desertas Wolf Spider – Strategy for its Conservation 2016-2022. Tech. rep. IUCN-SSC, Finnish Museum of Natural History, Bristol Zoological Society and Instituto das Florestas e Conservação da Natureza, Funchal, Madeira. https://portals.iucn.org/library/sites/library/files/documents/2016-097.pdf .

Crespo, L. C., I. Silva, P. A. V. Borges and P. Cardoso (2014). 'Assessing the conservation status of the strict endemic Desertas wolf spider, *Hogna ingens* (Araneae, Lycosidae)'. In: Journal for Nature Conservation 22 (6), pp. 516–524. doi: 10.1016/j.jnc.2014.08.005.

TWO NEW PAPERS ON HEMIPTERA AND HYMENOPTERA FROM MADEIRA AND MACARONÉSIA

By António Franquinho Aguiar

I gladly share the two most recent publications on Hemiptera and Hymenoptera from the Madeira and Porto Santo Islands and Macaronesia: one reports five additional introduced psyllid species, and another presents a revision of the wasp family *Evaniidae* in Macaronesia.

Please find below the references:

AGUIAR, A.M. Franquinho & CRAVO, D. (2025) Jumping plant-lice (Hemiptera: Psylloidea) new to Madeira and Porto Santo Islands. *Entomologist's Monthly Magazine*, 161 (4): 317-325. https://doi.org/10.31184/M00138908.1614.4319

SILVA, H.M., AGUIAR, A.M. Franquinho, GONÇALVES, Y.M., GOMES, G. & AGUÍN-POMBO, D. (2025) A review of the ensign wasps (Hymenoptera: Evaniidae) from Macaronesia. *Zootaxa*, 5653 (2): 263-274. https://doi.org/10.11646/zootaxa.5653.2.6

"Two new papers report new species for the Madeira and Porto Santo islands, along with a review of the ensign wasps from Macaronesia "

FOUR AZOREAN ENDEMIC SPECIES RECEIVE NEW IUCN GREEN STATUS OF SPECIES ASSESSMENTS—ADDING A RECOVERY LENS TO CONSERVATION IN THE AZORES

By Paulo A.V. Borges

Four endemic species from the Azores have now been assessed using the IUCN Green Status of Species, a global standard that complements the IUCN Red List by quantifying how close a species is to full recovery and how much conservation has helped (or is still needed).

The new Green Status assessments cover three Azorean endemic beetles and one cave spider:

- *Cedrorum azoricus* (ground beetle)
- *Drouetius borgesi* (weevil)
- *Tarphius serranoi* (ironclad beetle)
- *Turinyphia cavernicola* (Algar do Carvão cave spider)

Why these assessments matter

Unlike extinction-risk categories alone, the IUCN Green Status of Species explicitly evaluates species recovery against a "fully recovered" benchmark across a species' indigenous range, using a Green Score (0–100%) and four conservation impact metrics: Conservation Legacy, Conservation Dependence, Conservation Gain, and Recovery Potential.

Taken together, these four assessments provide a clearer, decision-ready picture of: Where each species stands on the recovery pathway, not only its risk of extinction.

Whether the current status depends on continued conservation, and what recovery could look like with sustained action and innovation.

A recovery perspective for Azorean endemics

All four species are Azorean endemics, reinforcing the archipelago's global importance for unique biodiversity—and the responsibility to maintain, restore, and monitor key habitats and pressures.

For Turinyphia cavernicola, a narrowly distributed cave species associated with volcanic subterranean habitats on Terceira, published conservation profiling and cave-focused context highlight the importance of sustained site stewardship and disturbance management.

What is the IUCN Green Status of Species?

The IUCN Green Status is an IUCN standard designed to measure species recovery and conservation impact, complementing the IUCN Red List's focus on extinction risk.

"Four Azorean endemic species have been assessed using the IUCN Green Status, measuring recovery and conservation impact, highlighting the importance of continued efforts to restore and protect their unique habitats."

References:

Borges, P.A.V. & Oyarzabal, G. (2025). *Cedrorum azoricus* (Green Status assessment). The IUCN Red List of Threatened Species 2025: e.T97113324A9711332420252.Accessed on 12 December 2025. https://www.iucnredlist.org/species/97113324/99166544#green-assessment-information

Borges, P.A.V. & Oyarzabal, G. (2025). *Drouetius borgesi* (Green Status assessment). The IUCN Red List of Threatened Species 2025: e.T97161490A9716149020252.Accessed on 12 December 2025. https://www.iucnredlist.org/species/97161490/99166644#green-assessment-information

Borges, P.A.V. & Oyarzabal, G. (2025). *Tarphius serranoi* (Green Status assessment). The IUCN Red List of Threatened Species 2025: e.T112215669A11221566920252.Accessed on 12 December 2025. https://www.iucnredlist.org/species/112215669/112215674#green-assessment-information

Borges, P.A.V. & Oyarzabal, G. (2025). *Turinyphia cavernicola* (Green Status assessment). The IUCN Red List of Threatened Species 2025: e.T58080969A5808096920252.Accessed on 12 December 2025. https://www.iucnredlist.org/species/58080969/58081428#green-assessment-information

FINAL REMARKS

A big thank you to everyone who contributed to the second newsletter of the year. It is inspiring to see such a diverse range of invertebrate projects flourishing across many locations.

As our community continues to grow and reach new Atlantic islands and archipelagos, we encourage both new and long-standing members to share news and updates on their projects and research. Every contribution helps highlight the remarkable work being carried out for invertebrate conservation across the Atlantic Islands.

With the festive season approaching, we would like to wish you all a very Happy Christmas and a prosperous New Year. We look forward to sharing the next edition with you.

Best wishes,
Vicky, Paulo, Lena and Dinarte

Image credits:

Figure 1. *Pieris cheiranthi cheiranthi* nectaring on a native flower in the Barranco de Ruiz, Tenerife, in 2016.

Figure 2. Panoramic view over the Barranco de Ruiz, one of the areas that hosted a healthy population of *Pieris cheiranthi* until just a few years ago.

Figure 3. Team members discussing survey findings during fieldwork in Tenerife in October 2025, where extensive searches failed to detect any living individuals of *Pieris cheiranthi*".

Figure 4. Field sampling. Photo by Carlos Zaragoza Trello.

Figure 5. Specimen of *Melademа imbricata*. Photo by Felipe Rodríguez Arvelo.

Figure 6. Male of the Cuban endemic damselfly *Protoneura caligata*. A: lateral view. B: dorsal view of the head, thorax and first six abdominal segments, showing the blue, red and white colour pattern that resembles the Cuban national flag.

Figure 7. Field survey in Cuba for the project "Recovering the Cuban national damselfly." Team members near the source of the Higuanojo River in central Cuba, one of the localities where *Protoneura caligata* was recorded for the first time during the July–August 2025 survey. From left to right: Yusdiel Torres-Cambas, Marian Gallardo, Alejandro Catalá, Karen Gallardo and Raúl Henríquez.

Figure 8. Habitat, distribution and threats. A: Stream in the Ecological Reserve "Lomas de Banao," showing typical habitat of *Protoneura caligata*. B: Map of central Cuba depicting the sites where occurrences of *P. caligata* were detected during the survey. C: Pair of *P. caligata* ovipositing in La Batata stream, Topes de Collantes, central Cuba. La Batata is part of a popular ecotourism trail in Topes de Collantes Natural Park. Unfortunately, visitor use is not always environmentally responsible, as illustrated by a beverage can floating on the water surface in the background.

Figure 9. Examples of artwork produced to support the project as a result of collaborations with artists. A: Drawing of *Protoneura caligata* by Eva Jaramillo, later used for the project T-shirt (B) and other

outreach materials (C). D: Logo of the project “Recovering the Cuban national damselfly,” created by the Cuban painter Denis Gallardo.

Figura 10. *Drouetius borgesi borgesi*. Photo by António Machado.

Figura 11. *Xanthandrus azorensis*. Photo by Mário Boieiro.

Figure 12. *Orthomus bedelianus isambertoi.* Photo by Artur Serrano.

Figure 13. The Desertas Wolf Spider, *Hogna ingens,* in its retreat under a rock. Photo by Humberto Silva.

Figura 14. *Cedrorum azoricus* (ground beetle)

Figura 15. *Drouetius borgesi* (weevil)

Figura 16. *Tarphius serranoi* (ironclad beetle)

Figura 17. *Turinyphia cavernicola* (Algar do Carvão cave spider)