



The 2013 humpback whale season in Boavista

For the 6th subsequent year, Pedro López Suárez (Naturalia/BIOS.CV) and colleagues monitored the wintering population of humpback whales *Megaptera novaeangliae* in the seas off Boavista. The whales are present in the area from late February to late May. Surveys usually start in March and concentrate on the waters off northwestern Boavista. The research is carried out in cooperation with and supported by several national and international organizations. The main aims of the 2013 season were: 1) to continue photo-identification of individual humpback whales by documenting flukes and dorsal fins; 2) to collect data on the temporal and spatial distribution of humpback whales within the area; 3) to record humpback whale songs; 4) to monitor the number of female/calf pairs.

Between 8 March and 30 May 2013, 103 surveys were conducted. A total of 111 sightings of humpback whales were recorded, as well as eight sightings of rough-toothed dolphins *Steno bredanensis* and one of bottlenose dolphins *Tursiops truncatus*. Over 55% of the humpback sightings were of single individuals, many of which were singing males. Photographs of 76 flukes of at least 60 different individuals were obtained. The approximate number of individual whales observed was between 70 and 80. Of these, 22 have already been matched to photographs in the North Atlantic Humpback Whale Catalogue, while 11 whales (probably all males) are known to have visited Boavista in 2011, 2012 and 2013. The number of calves observed in 2013 ($n = 9$) did not differ significantly from previous seasons (viz. 8 in 2012 and 11 in 2011), but the number of mother/calf pair sightings and their re-sighting rate were much lower than in 2012 and 2011. Photo-identification results once again confirmed the link between Cape Verde and higher latitude areas in the northeastern Atlantic such as Azores, Iceland and Norway. Three whales sighted in 2013 were previously photographed elsewhere in the North Atlantic: HWC 4564 off Iceland, HWC 4952 off Azores and Norway, and HWC 4792 off Azores.

Iago sparrows in the Netherlands – a tragi-comical soap without happy ending

Four Iago sparrows *Passer iagoensis* arrived in the Netherlands aboard M/V *Plancius* coming from the Cape Verde Islands on 19 May 2013 (see [Zoological News | Notícias Zoológicas No. 2](#)). The birds were part of a group of *ca.* 20 sparrows that came aboard while the ship stayed off Raso Islet two weeks earlier. After its stay in Cape Verde waters, the ship continued its journey northwards and 11 sparrows were still on board while the ship passed through the Madeiran Islands, 11-13 May. It is thought that some birds left the ship there and when the *Plancius* reached its final destination at Hansweert, municipality of Reimerswaal, province of Zeeland, the Netherlands, only

four of them were still present. Naturalists that had made the journey from Cape Verde aboard the ship cheerfully spread the news of the arrival of these ‘stowaways’ and for a week many Dutch bird watchers made the trip to Hansweert to have a look at the unexpected guests. Meanwhile, two of the four sparrows had disappeared and only two – a male and a female – remained on the ship, where they were regularly provided with bread and water. The birds were also seen visiting the nearby shore (Fig. 1-3). Then, on 27 May, Dutch bureaucracy came into action and fate turned against the pretty little birdies. Considered invasive exotics that had entered Dutch territory illegally and fearing a population explosion of these foreign intruders, the owner of the ship was ordered to catch the two birds and hand them over to the Dutch authorities. The two sparrows were indeed trapped and taken into custody, where one of them soon died. The fate of the other bird is unknown (the [official news release](#) stated that it was kept in captivity). Seldom have Dutch authorities managed to ridicule themselves more than in the tragi-comical soap of the ‘illegal’ Capeverdean sparrows.



Fig. 1-3. Iago sparrow *Passer iagoensis*, male and female, Hansweert, the Netherlands, 26 May 2013
© Jaco Walhout (left and centre), © Rob Wuster (right).

The 2013 loggerhead nesting season in Boavista

With *ca.* 24,000 nests and *ca.* 5,000 nesting females, last year (2012) was an extraordinary nesting season for loggerhead turtles *Caretta caretta* in Boavista. It is not unusual that after a record year a season with a lower number of nests follows. During 2013, *ca.* 2,000 females are regularly nesting in Boavista and the total number of nests will be less than the average (which is *ca.* 13,000) for the past six years. The least successful year was 2011, when less than 5,000 nests were registered. These inter-annual fluctuations are not necessarily associated with significant variations in population size, but are probably caused by the reproductive strategy of most marine turtles, where females only migrate to the nesting grounds every 2-3 years. In doing so, females decrease the energetic costs of reproductive migrations and concentrate reproductive effort on those years in which they can lay up to seven clutches every 14-18 days. This nesting strategy would not cause inter-annual fluctuations in the number of nests if the same number of females migrated to Cape Verde every year. However, this is not the case and many females synchronize their migration in specific years. These synchronizations are probably caused by environmental factors in the marine environment. Clearly, if in one year (e.g. 2012) most females nest, the next year these females will remain on their feeding grounds and only those females that did not breed in the record year will come to Cape Verde to nest. This is what happened in 2010 and 2011 and again in 2013. Therefore, in order to monitor the overall population trend, data from many consecutive years (at least 15) are needed. Thanks to the efforts of many dedicated people, the number of turtles killed on the beaches of Boavista has dropped significantly over the past few years. However, our objective remains to eradicate all turtle killing in the island for once and for all. Adolfo Marco [BIOS.CV](#).

Conservation status of terrestrial reptiles in Cape Verde

Following the publication of [Vasconcelos *et al.*](#) (2013) in the journal *Oryx* last January, the conservation status of terrestrial reptile species in Cape Verde are now available at the IUCN Red List website (<http://www.iucnredlist.org>).

Cape Verde has a higher number of reptile taxa and endemics than any of the five archipelagos in the Macaronesia. However, until recently, detailed information about the distribution of terrestrial reptile biodiversity in this region was still missing. Acknowledging that mapping the precise distribution of these animals and assessing their conservation status were key steps towards their effective conservation, Raquel Vasconcelos (CIBIO/InBIO and Institut de Biologia Evolutiva – IBE, Consejo Superior de Investigaciones Científicas–Universitat Pompeu Fabra - CSIC-UPF), José Carlos Brito (CIBIO/InBIO), Salvador Carranza (IBE, CSIC-UPF) and James Harris (CIBIO/InBIO) set out to review the distribution and conservation status of the terrestrial Cape Verdean herpetofauna.

By carrying out extensive fieldwork and an exhaustive analysis of post-1980 literature, the researchers found that one taxon, *Chioninia coctei*, continues to be considered Extinct, and that geckos are rarer than skinks, possibly because of their high habitat specialization, with more than half occurring on only one island/islet. They also noticed that about half of all taxa are potentially threatened. This represents twice the proportion of those in the Canary Islands, a difference that could be explained by the smaller area and greater aridity of the Cape Verde Islands. In a press release about the latest update of the IUCN Red List of Threatened Species, the conservation status of Cape Verdean reptiles was given particular attention: http://www.iucn.org/news_homepage/?13243/Worlds-oldest-and-largest-species-in-decline--IUCN-Red-List.



(A) *Hemidactylus bouvieri* (Critically Endangered) and (B) *Tarentola gigas* (Endangered), endemic threatened Cape Verde reptiles. Photos by Raquel Vasconcelos.
(A) *Hemidactylus bouvieri* (Críticamente em Perigo) e (B) *Tarentola gigas* (Em perigo), répteis endémicos de Cabo Verde. Fotografias de Raquel Vasconcelos.

Bigeye thresher *Alopias superciliosus* landed in Maio in July 2013

On 18 July 2013, a large shark was landed by local fishermen at Praia da Rocha, Vila do Maio (Porto Inglês), Maio Island, Cape Verde Islands (Fig. 1-2). Because of its long dorsal caudal lobe, large eyes and the presence of a deep horizontal groove on each side of the head, it could be

positively identified as a bigeye thresher *Alopias superciliosus* (Lowe, 1839). Male bigeye threshers can reach a length of 4.60 m and females over 4.30 m. No measurements were apparently taken of the animal landed in Maio.

Bigeye threshers are found in the Atlantic, Pacific and Indian Oceans in coastal waters over the continental shelves, sometimes close inshore in shallow waters and on the high seas far from land (Compagno 1984). In the eastern Atlantic, the species occurs from Portugal in the north to Angola in the south (Compagno 1984), which would logically include the Cape Verde Islands (the distribution map in [Fishbase](#) certainly suggests so). Nevertheless, we have not succeeded in locating any pertinent Cape Verde records so far. The species is listed without further comment in the recent check-list of Cape Verde coastal fishes by Wirtz *et al.* (2013), who gave Cadenat & Blache (1981) as the sole reference for its inclusion in their list. However, the entry for *Alopias superciliosus* in Cadenat & Blache (1981) does not mention Cape Verde at all and it is, therefore, unclear on what basis the species was included by Wirtz *et al.* (2013). An inquiry about the status of bigeye thresher in Cape Verde directed at the shark specialist at INDP in Praia remained unanswered. We will continue our attempts to establish the precise status of *Alopias superciliosus* in Cape Verde seas. Any information in this connection will be welcomed by the Editor. With thanks to Franziska Koenen for informing us about the Maio landing.



Fig. 1-2. Bigeye thresher *Alopias superciliosus*, Maio, 18 July 2013 © Rito Spencer.

References

- Cadenat, J. & J. Blache, 1981. Requins de Méditerranée et d'Atlantique (plus particulièrement de la Côte Occidentale d'Afrique). Faune Tropicale 21: 1-330.
- Compagno, L.J.V., 1984. Sharks of the World, Part 1 – Hexanchiformes to Lamniformes. FAO Fisheries Synopsis No. 125, Vol. 4, Part 1. FAO, Rome. 249 pp.
- Wirtz, P. *et al.*, 2013. The coastal fishes of the Cape Verde Islands – new records and an annotated check-list. Spixiana 36: 113-142.

ZOOLOGICAL NEWS FROM THE NEWSPAPERS | NOTÍCIAS ZOOLOGICAS DE JORNAIS

Inicia campanha de protecção das tartarugas

A Câmara Municipal do Tarrafal (São Nicolau) começou a campanha de protecção das tartarugas no concelho. A sensibilização está em curso e vai prosseguir nas próximas semanas. O ponto alto

será a constituição de equipas de vigia nas praias do município onde, regularmente, as tartarugas costumam ir desovar.

A campanha de protecção das tartarugas envolve duas fases: a primeira é definida como a mais visível, pois visa proteger as praias onde normalmente essa espécie procura deixar os seus ninhos. A segunda fase da campanha consiste na abordagem directa com as pessoas e as instituições onde se fala da necessidade de todos colaborarem nesta tarefa de proteger as tartarugas. A Câmara Municipal do Tarrafal continua a mobilizar parceiros para montar equipas de vigia nas praias do Município, sobretudo, em D'boxe D'rotcha, Praia Grande, Barril, Broco, onde regularmente e em tempo de desovas as tartarugas costumam sair.

A campanha conta com a parceria de instituições como a Polícia Nacional, o Liceu da Cidade, a Escola Lucília Freitas e de inúmeros voluntários. Conta também com apoios a nível de recursos humanos cedidos pela ONG SOS Tartarugas – com quem a Câmara Municipal tem um acordo – que envia do Sal propositadamente para esta campanha dois dos seus especialistas. Apoios humanos chegam também de Espanha e de São Vicente, nomeadamente, da BIOS-CV, que fez deslocar três técnicos à ilha, dos quais um da estação ecológica de Doñana.

[Notícias do Norte](#), 17 de Junho de 2013

[SCVZ EDITOR'S NOTE: Notícias do Norte apparently googled for a picture of a sea turtle to illustrate the news and decided to use one of the Amazon river turtle *Podocnemis expansa*, a South American fresh water species...]

Santa Luzia com apenas 10 por cento dos ninhos de tartarugas do ano passado

Os biólogos marinhos da ONG Biosfera I que se encontram na ilha de Santa Luzia a monitorar a época de desova das tartarugas marinhas registaram até agora cerca de 250 ninhos nas praias da ilha deserta. Um número muito abaixo dos cerca de dois mil ninhos de tartarugas marinhas contabilizados em todo o período de desova do ano de 2012, informou a bióloga, Patricia Rocha ao Asemanaonline. A época de protecção das tartarugas marinhas de Santa Luzia começou há cerca de um mês e vai até finais de Setembro ou início do mês de Outubro mas os biólogos não esperam um aumento significativo desse número até ao fim da época de desova.

Apesar disso, o caso não é para alarmes. “A diminuição do número de tartarugas na praia já era esperado tendo em conta que no ano passado ultrapassamos em muito as nossas expectativas. 250 ninhos é um valor perfeitamente aceitável devido à biologia natural desta espécie que não permite dois anos seguidos de picos de desova pelo que já contávamos com um número menor de ninhos este ano”, informou ao Asemanaonline a bióloga marinha. Ao contrário do número reduzido de ninhos que não preocupa a Biosfera I, o aumento do perigo do navio Terry Tres cujo casco ameaça fender com toneladas de combustível a bordo devido à acção do swell de sul preocupa grandemente os cientistas e biólogos marinhos desta ONG. O forte cheiro a combustível na praia de Francisca pode fazer com que as tartarugas marinhas desistam de desovar.

A ONG dá conta ainda que três baleias-piloto deram à costa na Praia dos Achados, a mais poluída da ilha, sendo uma delas juvenil. Estes casos também são frequentes devido à desorientação do sistema de navegação destes mamíferos.

[A Semana](#), 22 de Agosto de 2013

Associação SOS Tartaruga preocupada com o festival de Santa Maria

A associação SOS Tartaruga manifestou hoje a sua preocupação com a realização do festival de Santa Maria este fim-de-semana na ilha do Sal, por coincidir com a época da desova e o período de eclosão das tartarugas.

Berta Renom, coordenadora da associação, adiantou que o ideal seria que o certame fosse realizado numa área mais afastada da linha da costa do mar, tendo em conta que todas as praias na ilha do Sal são adequadas para a desova. Para esta responsável, a data mais apropriada para a realização do festival musical seria entre Janeiro e Maio, época que não acontece desova e eclosão dessa espécie marinha. Segundo Berta Renom, Santa Maria não tem registo de ninhos mas, se a realização do festival nesta praia, poderá ter um “impacto negativo” na desova, fazendo com que as tartarugas saiam do mar devido ao barulho, as luzes, a presença de muitas pessoas, não só nesta praia, mas também nas circundantes. “Uma das preocupações da SOS Tartaruga é a acrescida poluição luminosa e a quantidade de lixo que irá ficar na praia e no mar acabando por fazer com que as tartarugas bebés se desorientem”, indicou, anotando que, agora, o mais importante é trabalhar no sentido de minimizar os impactos do evento, não só nas tartarugas, mas também em todo o ecossistema costeiro.

Durante os dois dias de festival, 13 e 14 de Setembro, a SOS Tartaruga e outras organizações não-governamentais (ONG) irão aproveitar para promover actividades, palestras e exposições sobre tartarugas, meio marinho, lixo e sensibilização sobre a protecção do meio ambiente. Berta Renom disse que a Câmara Municipal do Sal irá tomar medidas de mitigação dos impactos nocivos, tais como a colocação de caixotes do lixo e a respectiva recolha, e informar os participantes e o público do festival sobre a protecção do ambiente.

[Expresso das Ilhas](#), 13 de Setembro de 2013

Porto Novo: Peixeiras impedidas de vender cavala capturada antes do período de defeso

As peixeiras no município de Porto Novo estão a braços com a venda da cavala capturada antes do período de defeso. Tudo porque as autoridades querem provas de que a pesca foi realizada antes de ser interdita a pesca dessa espécie. A Associação da classe pede medidas alternativas para resolver o problema.

O presidente da Associação dos Pescadores e Peixeiras de Porto Novo, Atlermiro Correia, afirma que a classe que defende está a atravessar graves problemas para escoar a cavala preta que estocaram antes do período de defeso para exactamente, o venderem durante o período de defeso da espécie. Mas como não conseguem provar às autoridades a origem desse pescado, enquanto decorre a interdição da pesca da cavala não podem comercializar cavala preta no mercado. Correia esclarece que não é contra a protecção da cavala, mas defende que as autoridades deveriam abrir uma excepção para quem adquiriu o produto antes do período de defeso, porque os armadores estão a colaborar e abdicam da pesca dessa espécie enquanto vigora a proibição. Questionado se essa excepção não pode abrir caminho para a pesca ilegal da cavala enquanto vigora a medida, Correia entende que não, porque, afirma, é fácil distinguir um peixe fresco do congelado. Daí lamentar esta atitude radical das autoridades, que agora estão a proibir a venda mesmo a quem adquiriu o pescado antes desta temporada de defeso e o conservou para vender como acontecia em

outras épocas. Por hora, Correia acha que a alternativa mais viável "é rasgar a cavala que está congelada e vende-la seca depois, para atenuar as perdas que as peixeiras registam actualmente".

Ainda assim, os inspectores da Direcção Geral das Pescas em Porto Novo, que recentemente apreenderam cerca de 15 quilos de cavala, alegam que vão continuar a fiscalizar e a penalizar os transgressores. O pescado até agora apreendido foi doado ao Lar de Idosos da cidade.

[A Semana](#), 21 de Agosto de 2013

[SCVZ EDITOR'S NOTE: The species concerned is mackerel scad *Decapterus macarellus* (Cuvier, 1833) (Perciformes, Carangidae).]

Pragas de tartaruga atacam zonas agrícolas do Fogo

Os agricultores, que mal dormem de tão felizes que estão com as últimas chuvas, agora têm algo a perturbar-lhes o sono: surgiram os primeiros focos da praga das tartarugas. Mas o Ministério do Desenvolvimento Rural diz ter a situação sob controlo, ao colocar técnicos no terreno para ajudar no combate à praga. Os campos agrícolas das zonas altas dos concelhos de Santa Catarina e Mosteiros são os mais afectados. Também nas localidades do concelho de São Filipe as culturas estão a ser atacadas pelas tartarugas (*Nezara viridula*). Os camponeses temem ainda o aparecimento de novas pragas, como gafanhoto e a mosca branca, que no ano passado atacou fortemente a cultura de feijão congo.

Apesar das pragas, em conversa com o [asemanaonline](#), vários agricultores da ilha mostraram-se animados com as perspectivas do novo ano agrícola. Até porque, para garantir o combate às tartarugas, técnicos do MDR já estão no terreno a pulverizar as culturas. A delegação do MDR em São Filipe garante que estão criadas as condições mínimas para controlar a praga porque todos os centros de extensão rural estão dotados de equipamentos e produtos para esse combate. Há ainda uma recomendação para os pastores guardarem os animais nos currais, pois o químico utilizado no combate à praga é altamente tóxico e poderá afectar os animais, caso ingiram plantas pulverizadas.

[A Semana](#), 25 de Agosto de 2013

[SCVZ EDITOR'S NOTE: The species concerned is the southern green stink bug *Nezara viridula* L., 1758 (Hemiptera, Pentatomidae).]

Captura do búzio do pepino-do-mar: mergulhadores e pescadores pedem legislação

Os mergulhadores e pescadores que se têm dedicado à captura do pepino-do-mar e dos búzios pedem com urgência a legislação e fiscalização dessa actividade que está proibida em Cabo Verde, por falta de uma regulamentação por parte da Direcção-Geral das Pescas. A DGP tinha dado luz verde para uma possível legalização depois de defender que a proibição se deve à forma como esses moluscos são capturados dado que a actividade não oferece condições de segurança para os envolvidos.

Em representação da classe, Paulo Semedo, membro do Sindicato que auxilia os trabalhadores do sector das pescas, sublinha que deve haver um estudo por parte das autoridades competentes dos mares de Cabo Verde, seguido de legislação e fiscalização da pesca do búzio e do pepino-do-mar. E que caso as autoridades não estejam em condições de concluir estes propósitos que o Governo atribuía um subsídio aos chefes de família que vivem da captura desses moluscos.

Na ilha de São Vicente, a captura do pepino-do-mar e do búzio tornou-se numa actividade rentável para várias famílias, nomeadamente na aldeia piscatória de São Pedro. A captura desses moluscos, apesar de ser ilegal, tem a sua maior incursão de mergulhos na zona sul do Ilhéu dos Pássaros pelo que, com o passar do tempo, transformou-se num ganha-pão para várias famílias. Isto apesar dos constrangimentos e histórias de mergulhos que resultaram em mortes e de mergulhadores/pescadores que ficaram incapacitados depois de sofrerem lesões. Esta classe defende que “a DGP deve procurar soluções, porque há pessoas a arriscarem a vida para retirarem o sustento do fundo do mar. A extracção do pepino-do-mar já demonstrou aparentar ser uma boa oportunidade de negócio. Por isso, a DGP deve tirar as suas ilações para fazer a legalização e, posteriormente, um trabalho de fiscalização nas áreas de captura”.

Por seu lado, Paulo Semedo entende as restrições da Direcção-Geral das Pescas em relação à segurança de quem pratica essa actividade, bem como assegurar a sustentabilidade da captura de búzios e de pepinos-do-mar. Mas esse activista sindical defende que “então devem determinar a quantidade desses moluscos que se devem apanhar por momento. Pelo que deverão criar um sistema de controlo, de modo que quem for apanhado com quantidades superiores deverá ser alvo de uma sanção e o produto ser apreendido. É certo que tudo isso vale com base na criação de uma legislação, porque essa actividade tem sido o garante do sustento de muitas famílias”.

[Notícias do Norte](#), 19 de Setembro de 2013

RECENT PAPERS ON CAPE VERDE ZOOLOGY | ARTIGOS RECENTES SOBRE ZOOLOGIA
CABOVERDIANA

In the following, recently published papers on Cape Verde zoology are listed. Should you know of any omissions in this listing, please let us know. We also appreciate receiving copies of your latest publications for inclusion in future editions. Please contact [cjhazevoet at gmail.com](mailto:cjhazevoet@gmail.com) or [ruifreitas at docente.unicv.edu.cv](mailto:ruifreitas@docente.unicv.edu.cv)

The evolution of north-east Atlantic gadfly petrels using statistical phylogeography. B. Gangloff, F. Zino, H. Shirihai, J. González-Solís, A. Couloux, E. Pasquet & V. Bretagnolle, **2013**, *Molecular Ecology* 22: 495-506; <http://dx.doi.org/10.1111/mec.12119>

ABSTRACT Macaronesia (north-east Atlantic archipelagos) has been host to complex patterns of colonization and differentiation in many groups of organisms including seabirds such as gadfly petrels (genus *Pterodroma*). Considering the subspecies of widely distributed soft-plumaged petrel for many years, the taxonomic status of the three gadfly petrel taxa breeding in Macaronesia is not yet settled, some authors advocating the presence of three, two or one species. These birds have already been the subject of genetic studies with only one mtDNA gene and relatively modest sample sizes. In this study, using a total of five genes (two mitochondrial genes and three nuclear

introns), we investigated the population and phylogeographical histories of petrel populations breeding on Madeira and Cape Verde archipelagos. Despite confirming complete lineage sorting with mtDNA, analyses with nucDNA failed to reveal any population structuring and Isolation with Migration analysis revealed the absence of gene flow during the differentiation process of these populations. It appears that the three populations diverged in the late Pleistocene in the last 150 000 years, that is 10 times more recently than previous estimates based solely on one mtDNA gene. Finally, our results suggest that the Madeira petrel population is ancestral rather than that from Cape Verde. This study strongly advocates the use of nuclear loci in addition to mtDNA in demographical and phylogeographical history studies.

High gene flow on a continental scale in the polyandrous Kentish plover *Charadrius alexandrinus*. Clemens Küpper, Scott V. Edwards, András Kosztolányi, Monif Al Rashidi, Terry Burke, Philipp Herrmann, Araceli Argüelles-Tico, Juan A. Amat, Mohamed Amezian, Afonso Rocha, Hermann Hötker, Anton Ivanov, Joseph Chernicko & Tamás Székely, **2012**, *Molecular Ecology* 21: 5864-5879; <http://dx.doi.org/10.1111/mec.12064>

ABSTRACT Gene flow promotes genetic homogeneity of species in time and space. Gene flow can be modulated by sex-biased dispersal that links population genetics to mating systems. We investigated the phylogeography of the widely distributed Kentish plover *Charadrius alexandrinus*. This small shorebird has a large breeding range spanning from Western Europe to Japan and exhibits an unusually flexible mating system with high female breeding dispersal. We analysed genetic structure and gene flow using a 427-bp fragment of the mitochondrial (mtDNA) control region, 21 autosomal microsatellite markers and a Z microsatellite marker in 397 unrelated individuals from 21 locations. We found no structure or isolation-by-distance over the continental range. However, island populations had low genetic diversity and were moderately differentiated from mainland locations. Genetic differentiation based on autosomal markers was positively correlated with distance between mainland and each island. Comparisons of uniparentally and biparentally inherited markers were consistent with female-biased gene flow. Maternally inherited mtDNA was less structured, whereas the Z-chromosomal marker was more structured than autosomal microsatellites. Adult males were more related than females within genetic clusters. Taken together, our results suggest a prominent role for polyandrous females in maintaining genetic homogeneity across large geographic distances.

[SCVZ EDITOR'S NOTE: This study incorporates data from the breeding population of *Charadrius alexandrinus* on Maio Island, Cape Verde.]

Local environment but not genetic differentiation influences biparental care in ten plover populations. Orsolya Vincze, Tamás Székely, Clemens Küpper, Monif Al Rashidi, Juan A. Amat, Araceli Argüelles-Ticó, Daniel Burgas, Terry Burke, John Cavitt, Jordi Figuerola, Mohammed Shobrak, Tomas Montalvo, András Kosztolányi, **2013**, *PLoS One* 8(4): e60998 (10 pages); <http://dx.doi.org/10.1371/journal.pone.0060998>

ABSTRACT Social behaviours are highly variable between species, populations and individuals. However, it is contentious whether behavioural variations are primarily moulded by the

environment, caused by genetic differences, or a combination of both. Here we establish that biparental care, a complex social behaviour that involves rearing of young by both parents, differs between closely related populations, and then test two potential sources of variation in parental behaviour between populations: ambient environment and genetic differentiation. We use 2904 hours behavioural data from 10 geographically distinct Kentish (*Charadrius alexandrinus*) and snowy plover (*C. nivosus*) populations in America, Europe, the Middle East and North Africa to test these two sources of behavioural variation. We show that local ambient temperature has a significant influence on parental care: with extreme heat (above 40°C) total incubation (i.e. % of time the male or female incubated the nest) increased, and female share (% female share of incubation) decreased. By contrast, neither genetic differences between populations, nor geographic distances predicted total incubation or female's share of incubation. These results suggest that the local environment has a stronger influence on a social behaviour than genetic differentiation, at least between populations of closely related species.

[SCVZ EDITOR'S NOTE: This study incorporates data from the breeding population of *Charadrius alexandrinus* on Maio Island, Cape Verde.]

An overview of fisheries and sea turtle bycatch along the Atlantic coast of Africa. Kimberly A. Riskas & Manjula Tiwari, **2013**, Munibe Monographs, Nature Series, 1: 71-82.

ABSTRACT Some of the most productive and diverse marine ecosystems found anywhere in the world are located along the Atlantic coast of Africa. Industrial fishing fleets from Africa and foreign nations exploit the commercially valuable fishing resources in coastal exclusive economic zones (EEZs) and on the high seas. Small-scale artisanal fisheries operate extensively in coastal areas, catching a wide variety of species for subsistence and local trade. Incidental capture of sea turtles in the world's fisheries poses an urgent challenge to conservation and management efforts, and Atlantic Africa is no exception. The region supports important nesting and foraging grounds for five species of sea turtles—loggerheads *Caretta caretta* (Linnaeus, 1758), green turtles *Chelonia mydas* (Linnaeus, 1758), leatherbacks *Dermochelys coriacea* (Vandelli, 1761), hawksbills *Eretmochelys imbricata* (Linnaeus, 1766), and olive ridleys *Lepidochelys olivacea* (Eschscholtz, 1829). This study characterizes the predominant fisheries in the region and compiles the available information on sea turtle bycatch in 21 countries between Mauritania and Namibia; intentional take is also described. Despite the active fisheries in the region, detailed information on sea turtle-fisheries interactions is sparse for most African countries in the eastern Atlantic, highlighting an urgent need to address this gap.

[SCVZ EDITOR'S NOTE: This overview of fisheries and sea turtle bycatch in West Africa includes an entry on Cape Verde.]

Evolution of the MHC class I genes in the endangered loggerhead sea turtle (*Caretta caretta*) revealed by 454 amplicon sequencing. Victor A. Stiebens, Sonia E. Merino, Frédéric J.J. Chain & Christophe Eizaguirre, **2013**, BMC Evolutionary Biology 13:95 (11 pages); <http://www.biomedcentral.com/1471-2148/13/95>

ABSTRACT In evolutionary and conservation biology, parasitism is often highlighted as a major selective pressure. To fight against parasites and pathogens, genetic diversity of the immune genes of the major histocompatibility complex (MHC) are particularly important. However, the extensive degree of polymorphism observed in these genes makes it difficult to conduct thorough population screenings. We utilized a genotyping protocol that uses 454 amplicon sequencing to characterize the MHC class I in the endangered loggerhead sea turtle (*Caretta caretta*) and to investigate their evolution at multiple relevant levels of organization. MHC class I genes revealed signatures of trans-species polymorphism across several reptile species. In the studied loggerhead turtle individuals, it results in the maintenance of two ancient allelic lineages. We also found that individuals carrying an intermediate number of MHC class I alleles are larger than those with either a low or high number of alleles. Multiple modes of evolution seem to maintain MHC diversity in the loggerhead turtles, with relatively high polymorphism for an endangered species.

[SCVZ'S EDITOR'S NOTE: This study used 454 deep amplicon sequencing to investigate the variation of the MHC class I alpha-1 heavy chain in a population of the loggerhead sea turtle (*Caretta caretta*) nesting in the Cape Verde archipelago.]

Living on the edge: how philopatry maintains adaptive potential. Victor A. Stiebens, Sonia E. Merino, Christian Roder, Frédéric J.J. Chain, Patricia L.M. Lee & Christophe Eizaguirre, **2013**, Proceedings of the Royal Society B 280; <http://dx.doi.org/10.1098/rspb.2013.0305>

ABSTRACT Without genetic variation, species cannot cope with changing environments, and evolution does not proceed. In endangered species, adaptive potential may be eroded by decreased population sizes and processes that further reduce gene flow such as philopatry and local adaptations. Here, we focused on the philopatric and endangered loggerhead sea turtle (*Caretta caretta*) nesting in Cape Verde as a model system to investigate the link between adaptive potential and philopatry. We produced a dataset of three complementary genomic regions to investigate female philopatric behaviour (mitochondrial DNA), male-mediated gene flow (microsatellites) and adaptive potential (major histocompatibility complex, MHC). Results revealed genetically distinct nesting colonies, indicating remarkably small-scale philopatric behaviour of females. Furthermore, these colonies also harboured local pools of MHC alleles, especially at the margins of the population's distribution, which are therefore important reserves of additional diversity for the population. Meanwhile, directional male-mediated gene flow from the margins of distribution sustains the adaptive potential for the entire rookery. We therefore present the first evidence for a positive association between philopatry and locally adapted genomic regions. Contrary to expectation, we propose that philopatry conserves a high adaptive potential at the margins of a distribution, while asymmetric gene flow maintains genetic connectivity with the rest of the population.

The coastal fishes of the Cape Verde Islands – new records and an annotated check-list. Peter Wirtz, Alberto Brito, Jesús M. Falcón, Rui Freitas, Ronald Fricke, Vanda Monteiro, Francisco Reiner & Oksana Tariche, **2013**. Spixiana 36: 113-142.

ABSTRACT A check-list of the coastal fishes of the Cape Verde Islands is presented. The species *Acantholabrus palloni*, *Canthigaster supramacula*, *Carcharhinus leucas*, *Chaetodipterus lippei*, *Corniger spinosus*, *Dasyatis centroura*, *Didogobius n. sp.*, *Epigonus constanciae*, *Halobatrachus didactylus*, *Hemiramphus balao*, *Leptocharias smithii*, *Lobotes surinamensis*, *Malacoctenus n. sp.*, *Megalops atlanticus*, *Mugil bananensis*, *Mugil capurrii*, *Negaprion brevirostris*, *Rhinecanthus aculeatus*, *Sardinella aurita*, *Sciaena umbra*, *Serranus heterurus*, *Sphyraena barracuda*, *Uranoscopus cadenati* and *Zu cristatus* are recorded for the first time from the Cape Verde Islands. We have recognized 77 previous records as identification errors or registration errors and indicate 35 other records as doubtful. Including the 24 new records, we now list 315 fish species from the coastal waters of the Cape Verde Islands. Twenty of them (6.3 %) appear to be endemic to the archipelago.

***Orthetrum trinacria* exuviae (Odonata: Libellulidae) from Santiago Island, Cape Verde: morphology, sexual size dimorphism and diagnostic features.** Nuno de Santos Loureiro, Christophe Brochard, Aldair Correia & Ewoud van der Ploeg, **2013**, Boletín de la Sociedad Entomológica Aragonesa 52: 281-284.

ABSTRACT Successful breeding of the Odonata *Orthetrum trinacria* (Selys, 1841) was for the first time confirmed for Santiago Island, Republic of Cape Verde, based on exuviae found in eight localities visited during a field survey carried out in August and September 2012. The relevant diagnostic features listed in the literature for the *O. trinacria* exuviae were assessed. We concluded that one of the diagnostic features, the epiproct length to basal width ratio, was not fulfilled in 97.8% of the 46 exuviae collected by us. Besides that, studied *O. trinacria* exuviae had an average of 26.0 mm of total length and did not evidence sexual size dimorphism.

Conopeptides from Cape Verde *Conus crotchii*. Jorge Neves, Alexandre Campos, Hugo Osório, Agostinho Antunes & Vitor Vasconcelos, **2013**. Marine Drugs 11: 2203-2215; <http://dx.doi.org/10.3390/md11062203>

ABSTRACT Marine Cone snails of the genus *Conus* contain complex peptide toxins in their venom. Living in tropical habitats, they usually use the powerful venom for self-defense and prey capture. Here, we study *Conus crotchii* venom duct using a peptide mass-matching approach. The *C. crotchii* was collected in the Cape Verde archipelago in Boa Vista Island. The venom was analyzed using matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS). About 488 molecular masses between 700 Da and 3000 Da were searched by matching with known peptide sequences from UniProtKB protein sequence database. Through this method we were able to identify 12 conopeptides. For validation we considered the error between the experimental molecular mass (monoisotopic) and the calculated mass of less than 0.5 Da. All conopeptides detected belong to the A-, O1-, O2-, O3-, T- and D-superfamilies, which can block Ca²⁺ channels, inhibit K⁺ channels and act on nicotinic acetylcholine receptors (nAChRs). Only a few of the detected peptides have a 100% UniProtKB database similarity, suggesting that several of them could be newly discovered marine drugs.