

New locality records for chelonians (Testudines: Chelidae, Podocnemididae, Testudinidae) from Departamento de Pasco, Peru

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Few surveys focusing on chelonians have been conducted in Peru (Fachín-Teran, 1993), and therefore little information regarding geographic records is available (Morales and McDiarmid, 1996; INRENA, 2009). Puerto Bermúdez District is a region in central Peru composed of lowland Amazon forest and a wide variety of fauna, although deforestation and overhunting are common practices in the area (Gaviria, 1981). Chelonians are eaten by local people, and also sold in local markets (Gaviria, 1981), but little is known about the species of turtles that occur in the area. In this work, we present new locality records of chelonians from Departamento de Pasco along with distribution maps for these species occurring in the Peruvian Amazon basin.

Fieldwork was conducted by BOF, FCM, and RAE from February to December 2009 in two Asháninkas native communities, Santa Rosa de Chivis community (SRCC) (10°20'06.5"S, 74°59'15.5"W, 264 m elevation) and San José de Azupizu community (SJAC) (10°23'17.57"S, 74°54'26.55"W, 260 m elevation). These border communities are located in Puerto Bermúdez District, Oxapampa Province, Departamento de Pasco, Peru, and they are in the buffer zone of the Natural Protected Area "Bosque de Protección San Matías – San Carlos". The captured turtles were measured with caliper (straight-line carapace length, to the nearest 0.1 mm), were photographed and subsequently released. Species were

identified and sexed according to their morphological characteristics, following Pritchard and Trebbau (1984) and Rueda-Almonacid et al. (2007). We checked the distributional records of each species in the literature and in electronic databases of museum collections (National Museum of Natural History-Smithsonian and World Turtle Database) and we built maps of distribution of each species within the Amazon basin. Capture methods and locality data details are depicted in each species account.

Chelonoidis denticulata (Testudines: Testudinidae)

We report additional locality records of *C. denticulata* in Departamento de Pasco based on individuals from SJAC and SRCC. One live adult female and three carapaces of adult *C. denticulata* were recorded in SJAC in August 2009. The female tortoise was found along the Azupizu River (10°21'59.24"S, 74°54'10.95"W, 247 m elevation) and the carapaces were obtained in native houses (10°23'17.57"S, 74°54'26.55"W, 260 m elevation). In SRCC we captured one juvenile tortoise (Figure 1G) in a forested area close to the community (10°20'30.61"S, 74°59'09.85"W, 263 m elevation) on 16 August 2009, and we recorded a carapace of an adult specimen in a native house in July 2009. Our record in SJAC is located approximately 50.7 km (airline) south of the previous record of the species in Puerto Amistad, Puerto Bermúdez District (Lehr, 2002) (Figure 2), expanding its distribution in Departamento de Pasco. Measurements: straight-line carapace length of tortoises from SJAC and SRCC were 30.7, 28.6, 28.6, 28.4, 26.2, and 16.0 cm.

Mesoclemmys gibba (Testudines: Chelidae)

We report the first record of *M. gibba* from Departamento de Pasco based on a male (Figure 1A, 1B), and three juveniles captured with fishing and trammel nets in SRCC in an oxbow lake (10°20'06.5"S, 74°59'15.5"W, 264 m elevation) on 15 September 2009

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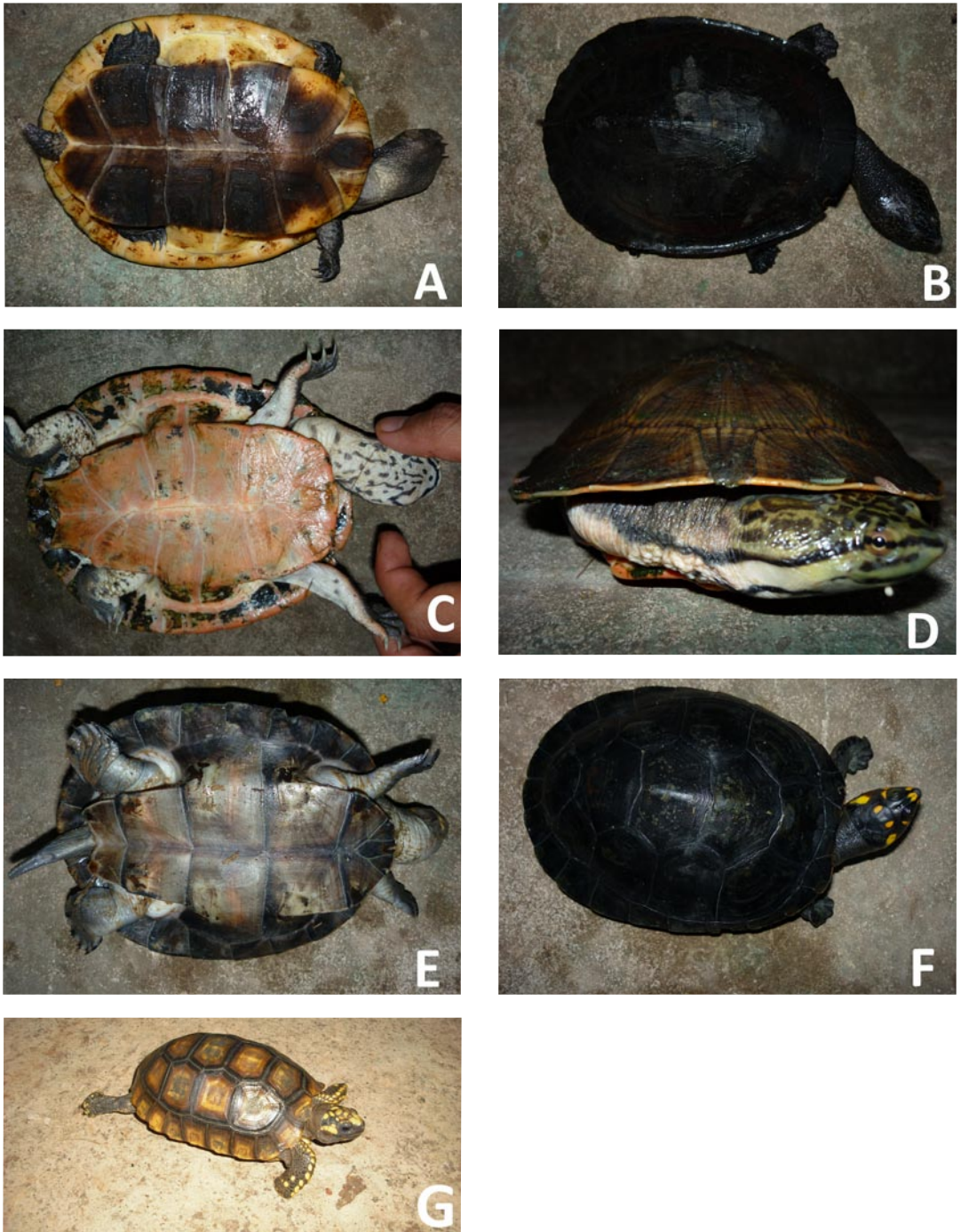


Figure 1. *Mesoclemmys gibba* (A, B), *Phrynops geoffroyanus* (C, D), *Podocnemis unifilis* (E, F) and *Chelonoidis denticulata* (G) registered in Santa Rosa de Chivis and San José de Azupizu communities, Puerto Bermúdez District, Departamento de Pasco, Peru.

and 27 October 2009, and based on two hand-captured hatchlings, one found in a shallow forest stream on

22 July 2009 at SJAC (10°23'16"S, 74°54'38.2"W, 263 m elevation), and another found on a road close

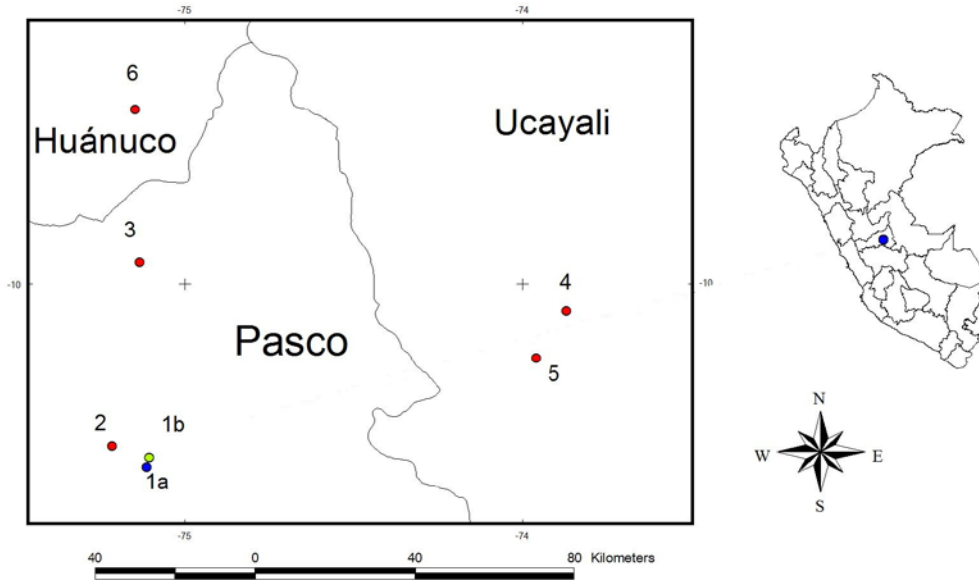


Figure 2. Distribution of *Chelonoidis denticulata* in Central Peru. 1a: San José de Azupizu community, Puerto Bermúdez District (present study); 1b: Azupizu River, San José de Azupizu community, Puerto Bermúdez District (present study); 2: Santa Rosa de Chivis community, Puerto Bermúdez District (present study); 3: Puerto Amistad, Puerto Bermúdez District (Lehr, 2002); 4: Bolognesi (Lehr, 2002); 5: Milagros (Lehr, 2002); 6: Panguana Biological Station (Schlüter, Icochea and Perez, 2004).

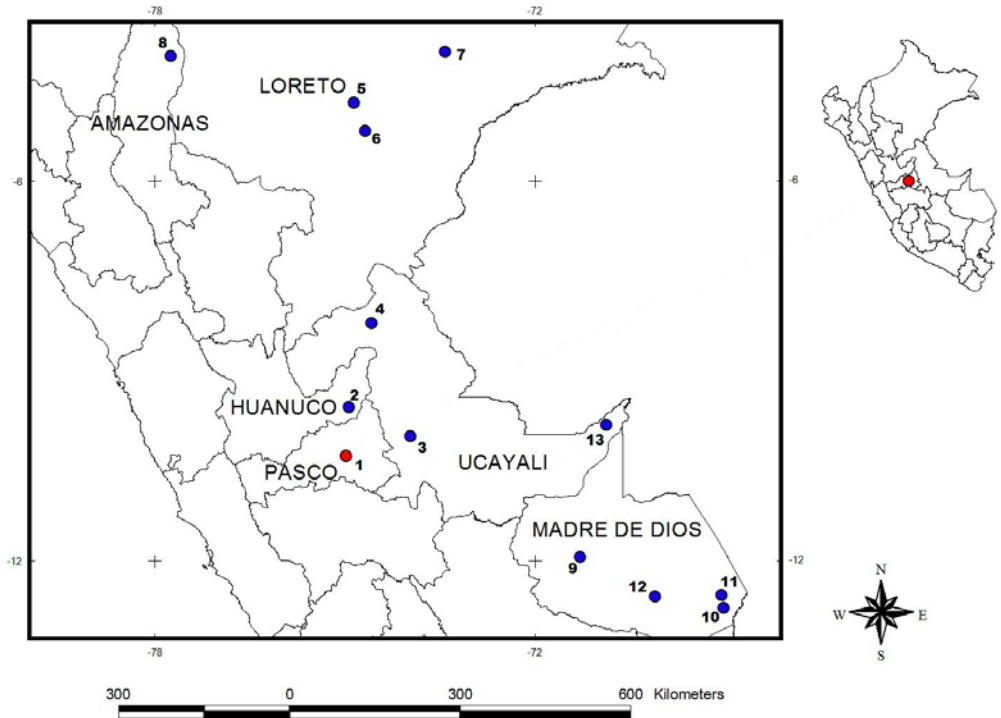


Figure 3. Distribution of *Mesoclemmys gibba* in Peru. 1: Santa Rosa de Chivis community (present study); 2: Panguana Biological Station (Schlüter, Icochea and Perez, 2004); 3: Bolognesi (Lehr, 2002); 4: Yarinacocha (Emysystem, 2010b); 5: Momón River (Dixon and Soini, 1986); 6: Pacaya-Samiria National Reserve (Soini, 1996); 7: Zona Reservada Allpahuayo-Mishana (Moravec, Tuanama and Mármol, 2001); 8: La Poza (USNM, 2010d); 9: Pakitzta, Manu National Park Reserve Zone (Morales and McDiarmid, 1996); 10: Tambopata (Doan and Arriaga, 2002); 11: Cuzco Amazonico Reserve (Duellman and Sallas, 1991); 12: Los Amigos River (von May et al., 2006); 13: Zona Reservada Alto Purús (Rodriguez, 2003).

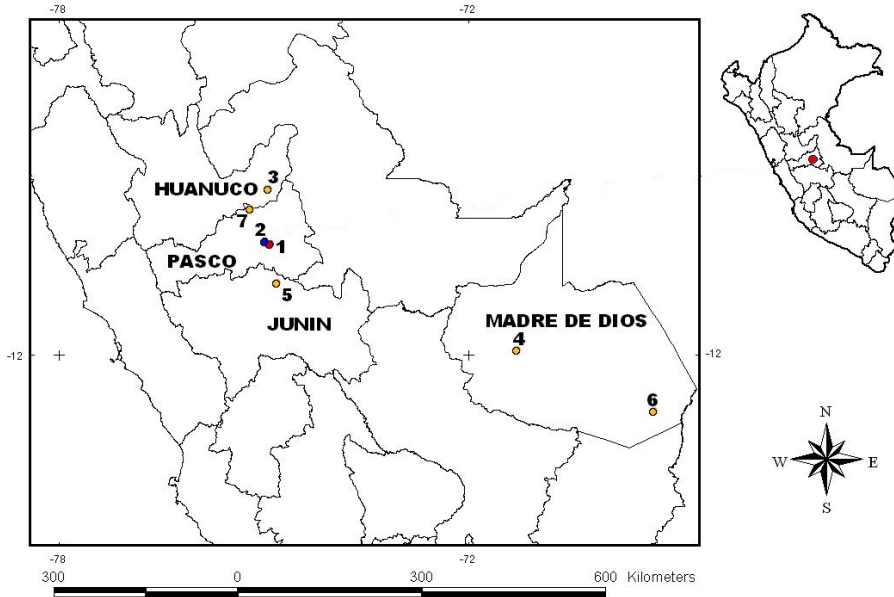


Figure 4. Distribution of *Phrynos geoffroanus* in Peru. 1: San José de Azupizu community (present study); 2: Santa Rosa de Chivis community (present study); 3: Panguana Biological Station (Schlüter, Icochea and Perez, 2004); 4: Pakitza, Manu National Park Reserve Zone (Morales and McDiarmid, 1996); 5: Perene River (USNM, 2010b); 6: Tambopata Reserve (USNM, 2010c); 7: Puerto Mayro (Emysystem, 2010c).

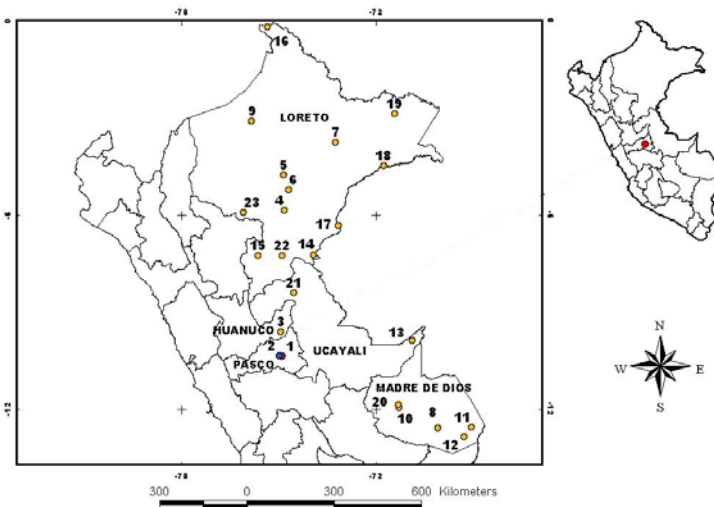


Figure 5. Distribution of *Podocnemis unifilis* in Peru. 1: San José de Azupizu community (present study); 2: Santa Rosa de Chivis community (present study); 3: Panguana Biological Station (Schlüter, Icochea and Perez, 2004); 4: Pacaya-Samiria National Reserve (Fachín-Teran, Chumbe and Taleixo, 1996; Soini, 1996, 1999); 5: Mishana River (Dixon and Soini, 1986); 6: Pacaya River (Fachín-Teran, 1994); 7: Vicinity of Iquitos (Iverson, 1986, 1992; Fachín-Teran, Acosta and Vilchez, 1992); 8: Los Amigos River (von May *et al.*, 2006); 9: Pastaza River (Escobedo *et al.*, 2006); 10: Pakitza, Manu National Park Reserve Zone (Morales and McDiarmid, 1996); 11: Cuzco Amazonico Reserve (Duellman and Sallas, 1991); 12: Tambopata Reserve (USNM, 2010a); 13: Zona Reservada Alto Purús (Iverson, 1992; Rodriguez, 2003); 14: Zona Reservada Sierra del Divisor (Souza and Rivera, 2006); 15: Buffer zone of Cordillera Azul National Park (Martinez, 2006); 16: Zona Reservada Güeppi (Yáñez-Muñoz and Venegas, 2008); 17: Comunidad Nativa Matsés (Gordo, Knell and Rivera, 2006); 18: Yavari (Rodriguez and Knell, 2003); 19: Campamento Yaguas (Rodriguez and Knell, 2004); 20: Cocha Cashu, Manu National Park (Rodriguez and Cadle, 1990); 21: Pucallpa (Emysystem, 2010a); 22: Contamana (Emysystem, 2010a); 23: Yurimaguas (Emysystem, 2010a).

to a shallow lagoon on 11 February 2009 at SRCC (10°20'06.5"S, 74°59'15.5"W, 264 m elevation). SRCC record (oxbow lake) is about 84 km (airline) south of the record for Panguana Biological Station in Departamento de Huánuco (Schlüter, Icochea and Perez, 2004) (Figure 3). Measurements: straight-line carapace length of turtles from SRCC and SJAC were 18.6, 13.3, 12.5, 11.7, 6.3, and 5.3 cm.

Phrynops geoffroanus (Testudines: Chelidae)

The present data represent the first record of *P. geoffroanus* from Puerto Bermudez District and an additional record from Departamento de Pasco based on one hatchling and one juvenile *P. geoffroanus* hand-captured in SJAC (10°23'05.14"S, 74°54'49.69"W, 267 m elevation) on a river beach and in a forest stream, respectively, on 08 September 2009 and 02 October 2009, and based on one hatchling (hand-captured) and ten juveniles (Figure 1C, 1D) captured with fishing nets and basking traps in SRCC (10°20'43.15"S, 74°59'02.13"W, 256 m elevation) in an oxbow lake, from July to November 2009. SRCC record is located approximately 65 km (airline) south of the previous record in Puerto Mayro, Palcazu District, Departamento de Pasco (Emysystem, 2010c) (Figure 4). Measurements: mean straight-line carapace length of turtles (\pm SD, Min., Max., N) from SJAC and SRCC was 12.43 cm (\pm 4.34, Min. = 4.03, Max. = 18.5, N = 13).

Podocnemis unifilis (Testudines: Podocnemididae)

We report the first record of *P. unifilis* from Departamento de Pasco based on one male and one female *P. unifilis* captured on 06 August 2009, in the vicinity of SJAC (10°21'07.4"S, 74°54'14.3"W, 266 m elevation) in the Azupizu River with basking traps, and 16 juveniles, two males (Figure 1E, 1F) and one female captured with fishing nets in an oxbow lake in SRCC (10°20'13.54"S, 74°58'33.85"W, 254 m elevation) between August and October 2009. SRCC record is located approximately 83 km (airline) south of the previous record of the species in Panguana Biological Station in Departamento de Huánuco (Schlüter, Icochea and Perez, 2004) (Figure 5). Measurements: mean straight-line carapace length of turtles from SJAC and SRCC was 15.66 cm (\pm 3.88, Min. = 8.4, Max. = 22.0, N = 21).

Although INRENA (2009) reports the presence of *P. unifilis* in the "Reserva Comunal El Sira", this huge natural protected area (616,413.41 hectares) is located in Departamentos de Huánuco, Ucayali and Pasco, and

this document does not provide locality data and/or voucher specimens, presenting the result as a reptile species checklist for the entire area. Our investigation reports *P. unifilis* with precise locality data in Pasco.

Few studies on chelonians natural history aspects have been conducted in Departamento de Pasco and these new records help in understanding the patterns of turtle species distribution in Peru. Three freshwater turtle species (*M. gibba*, *P. geoffroanus* and *P. unifilis*) recorded here can coexist in oxbow lakes, and the current practice of dynamite fishing by locals in such habitats could represent a threat to these aquatic species in this region.

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