

## *Osteopilus pulchrilineatus*, Hispaniolan Yellow Treefrog

Assessment by: IUCN SSC Amphibian Specialist Group,



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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Amphibia	Anura	Hylidae

**Taxon Name:** *Osteopilus pulchrilineatus* (Cope, 1870)

**Synonym(s):**

- *Hyla pulchrilineata* Cope, 1870

**Common Name(s):**

- English: Hispaniolan Yellow Treefrog, Common Treefrog

**Taxonomic Source(s):**

Frost, D.R. 2013. Amphibian Species of the World: an Online Reference. Version 5.6 (9 January 2013). Electronic Database. American Museum of Natural History, New York, USA. Available at: <http://research.amnh.org/herpetology/amphibia/index.html>.

**Taxonomic Notes:**

Recent phylogenetic analyses found that there is almost no genetic variation among Dominican populations of this species, suggesting relatively high levels of gene flow or migration. There is no evidence of cryptic species.

## Assessment Information

**Red List Category & Criteria:** Vulnerable B2ab(i,ii,iii) [ver 3.1](#)

**Year Published:** 2013

**Date Assessed:** April 19, 2012

**Justification:**

Listed as Vulnerable given that its area of occupancy (AOO) is estimated to be between 1,351 and 2,000 km<sup>2</sup>, its population is severely fragmented and there is a continuing decline in its extent of occurrence (EOO), AOO, and the area, extent and quality of its habitat throughout much of Hispaniola.

**Previously Published Red List Assessments**

2004 – Endangered (EN)

## Geographic Range

**Range Description:**

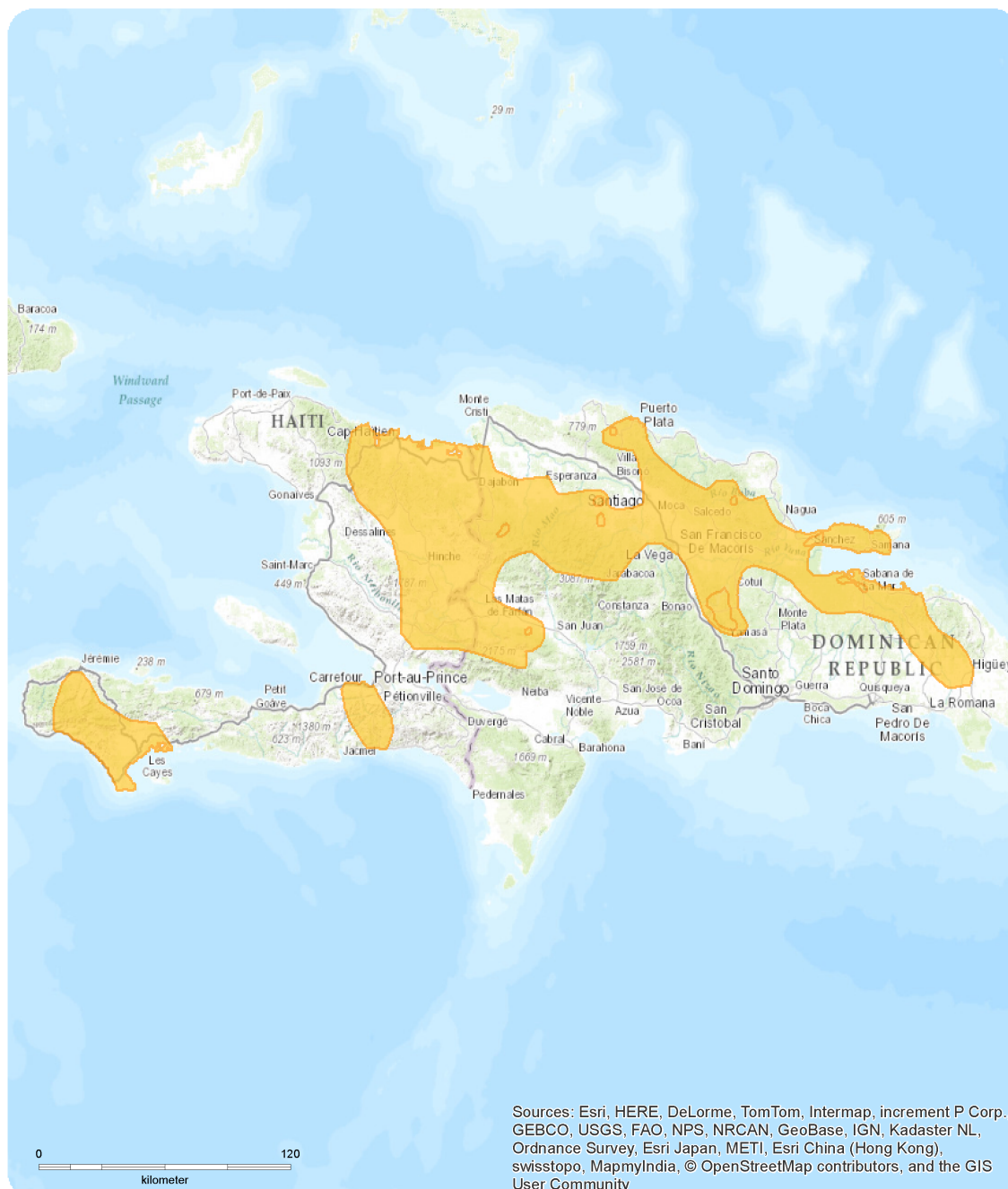
This species has a highly fragmented distribution on Hispaniola, which suggests that it has declined from a previously more uniform distribution. It has been recorded from sea level up to 1,091 m asl (Henderson and Powell 2009). Surveys from 2008-2010 have recorded this species in ten geographical localities of the Dominican Republic, including Montecristi, Dajabon, Nalga de Maco, Santiago

Rodríguez, Salto de la Damajagua, Loma La Canela, Monte Plata, Sanchez Ramírez, Samana and Los Haitises. These surveys have expanded its area of occupancy (AOO) since its last assessment in 2004. However, even considering this expansion, the occupied area (herein taken as a proxy for AOO, although the actual AOO would be more restricted as some sites consist of small ponds beyond the margins of which frogs cannot survive) in the Dominican Republic is estimated to be 1,074 km<sup>2</sup> based on field work and presence of suitable habitat (R. Powell pers. comm. February 2012). While there is no estimate for its occupied area in Haiti, based on the current original forest cover (estimated to be 277.5 km<sup>2</sup> or 1% of the original forest cover in Haiti, B. Hedges pers. comm. April 2012) and the rate of natural habitat loss experienced by this country, suitable sites are projected to disappear within 10-20 years (R. Powell pers. comm. February 2012; B. Hedges pers. comm. February 2012), so it is expected that this species' AOO will most likely not exceed 2,000 km<sup>2</sup>. Its current overall range (taken as a proxy for extent of occurrence) is estimated to be 24,334 km<sup>2</sup>; which represents a reduction in its historical EOO, as areas previously demarcated as its range have undergone alteration due to human activities (e.g. loss of area in the Valle de Cibao, portions of the Valle de San Juan, eastern plains and Neiba uplands, central uplands east of HW 1; R. Powell pers. comm. February 2012).

**Country Occurrence:**

**Native:** Dominican Republic; Haiti

## Distribution Map



### *Osteopilus pulchrilineatus*

#### Range

Extant (resident)

Compiled by:  
IUCN (International Union for  
Conservation of Nature),  
Conservation International &  
NatureServe.



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



## Population

This species has always been hard to find, but even so it appeared to be in decline prior to the 2004 assessment, with many historic subpopulations that seemed to disappear. It was not recorded during extensive searches of the Cordillera Central in the Dominican Republic in suitable habitat from 1998 to 2000. However, more recent surveys conducted between 2008-2010 have documented approximately 340 mature individuals in ten localities including the Cordillera Central. Although single individuals have been observed, the species is more commonly heard actively calling in groups ranging from 3-80 individuals. These surveys have also detected breeding populations. This species was last recorded in Haiti during a survey conducted in October 2010 at Plain Formon, Massif de la Hotte. The population is considered to be severely fragmented as per the IUCN Red List Guidelines, i.e. it occurs in fragmented habitat patches, it has a poor dispersal ability and limited gene flux, and 50% or more of individuals are found in isolated and fragmented habitat patches.

**Current Population Trend:** Unknown

## Habitat and Ecology (see Appendix for additional information)

It occurs in mesic broadleaf forests, riparian forests including remnant forests, mangrove forests, grasslands, marshes and agricultural landscapes including rice plantations, coffee and cacao plantations, and the presence of livestock (Pueblo Viejo Dominicana Corporation pers.comm. January 2012; Pueblo Viejo Dominicana Corporation pers.comm. July 2012). Recent surveys have revealed that, of a total of 53 transects, the species was found primarily in different forest types (N=40), but it was also recorded in wetlands (N=10), agricultural areas (N=2) and grasslands (N=1) (Pueblo Viejo Dominicana Corporation pers.comm. July 2012). Most of the surveyed transects (N=41) had various land use practices in the surrounding area, with only 12 transects surrounded by unaltered forests (Pueblo Viejo Dominicana Corporation pers.comm. July 2012). In terms of micro-habitat occupation, it is mainly found on shrubs and reeds (up to 2 m high) alongside and within streams, lagoons and flooded pools. Males call in flooded pools after heavy rain and eggs are laid in still water where the larvae also develop. Although this frog is found in habitat types that are contained within a variety of different land uses, the survey results above suggest that it requires forests and/or wetlands as the main habitat pockets to subsist within these different landscapes. In any event, its individual sites tend to be isolated from one another, making them vulnerable to trampling by livestock and local extirpation (R. Powell pers. comm. February 2012).

**Systems:** Terrestrial, Freshwater

## Use and Trade

There are no reports of this species being utilized.

## Threats (see Appendix for additional information)

In Haiti, severe degradation of streams has already significantly altered one of its breeding habitats, and streams in Hispaniola in general are being severely impacted by deforestation due to agricultural activities, logging and charcoaling (B. Hedges pers. comm. February 2012). Suitable habitat where the species is currently found is being impacted by mining activities (Barrick Gold Corporation 2012). Infrastructure development is also a threat in some areas in the Dominican Republic. The presence of

chytrid fungus has been confirmed in individuals at Nalga de Maco and Loma La Canela, although it has not been determined whether this is a threat to the species (G. Ross pers. comm. March 2011).

## Conservation Actions (see Appendix for additional information)

Its range includes several protected areas in both Haiti and the Dominican Republic, although most of these are in need of improved biodiversity conservation management. Small isolated populations outside of protected areas are thought to be at a very high risk of local extirpation within the next ten years if there is no intervention (R. Powell pers. comm. February 2012), so additional habitat protection is urgently required. Further survey work is necessary to determine the current population status of this species in the wild in Haiti, and to determine whether chytrid is a threat. The Dominican governmental agency Ministerio de Educación Superior, Ciencia y Tecnología (MECyT) is currently financing a three-year Dominican conservation project on threatened frogs due to climate change (RANA-RD), and which is expected to contribute towards a national Dominican amphibian conservation action plan with policy recommendations (C. Marte, M. Rodríguez and L. Díaz pers. comm. March 2011). Barrick Gold Corporation is funding a biodiversity project to establish assurance colonies of this and other Hylids impacted by its mining operation, and is also involved in building capacity and collecting additional biological information (Barrick Gold Corporation 2012).

The Amphibian Ark Conservation Needs Assessment process (Amphibian Ark 2011) conducted in the joint IUCN-Amphibian Ark workshop where this species was reassessed identified that further conservation actions for this taxon should include *in situ* conservation and conservation education.

## Credits

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## Bibliography

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## External Resources

For [Images and External Links to Additional Information](#), please see the Red List website.

# Appendix

## Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.6. Forest - Subtropical/Tropical Moist Lowland	-	Suitable	-
1. Forest -> 1.9. Forest - Subtropical/Tropical Moist Montane	-	Suitable	-
4. Grassland -> 4.5. Grassland - Subtropical/Tropical Dry	-	Marginal	-
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	-	Suitable	-
5. Wetlands (inland) -> 5.2. Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers/Streams/Creeks	-	Suitable	-
5. Wetlands (inland) -> 5.4. Wetlands (inland) - Bogs, Marshes, Swamps, Fens, Peatlands	-	Suitable	-
5. Wetlands (inland) -> 5.7. Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)	-	Suitable	-
5. Wetlands (inland) -> 5.8. Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	-	Suitable	-
14. Artificial/Terrestrial -> 14.1. Artificial/Terrestrial - Arable Land	-	Suitable	-
14. Artificial/Terrestrial -> 14.2. Artificial/Terrestrial - Pastureland	-	Suitable	-
14. Artificial/Terrestrial -> 14.3. Artificial/Terrestrial - Plantations	-	Suitable	-
15. Artificial/Aquatic & Marine -> 15.7. Artificial/Aquatic - Irrigated Land (includes irrigation channels)	-	Unknown	-

## Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
2. Agriculture & aquaculture -> 2.1. Annual & perennial non-timber crops -> 2.1.2. Small-holder farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		



2. Agriculture & aquaculture -> 2.3. Livestock farming & ranching -> 2.3.2. Small-holder grazing, ranching or farming	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion		
3. Energy production & mining -> 3.2. Mining & quarrying	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.3. Logging & wood harvesting -> 5.3.3. Unintentional effects: (subsistence/small scale)	Ongoing	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.2. Named species (Batrachochytrium dendrobatidis)	Ongoing	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

## Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions in Place</b>
In-Place Land/Water Protection and Management
Occur in at least one PA: Yes

## Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Conservation Actions Needed</b>
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
4. Education & awareness -> 4.3. Awareness & communications

## Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

<b>Research Needed</b>
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.5. Threats

## Additional Data Fields

<b>Distribution</b>
Estimated area of occupancy (AOO) (km <sup>2</sup> ): 1351
Continuing decline in area of occupancy (AOO): Yes
Estimated extent of occurrence (EOO) (km <sup>2</sup> ): 24334
Continuing decline in extent of occurrence (EOO): Yes
Lower elevation limit (m): 0
Upper elevation limit (m): 1091
<b>Population</b>
Population severely fragmented: Yes
<b>Habitats and Ecology</b>
Continuing decline in area, extent and/or quality of habitat: Yes

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