



AREA OF FOREST OCCUPIED BY THE COLONIES OF MONARCH BUTTERFLIES IN MEXICO, DURING THE OVERWINTERING PERIOD 2025-2026.

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Executive Summary

During the overwintering season 2025-2026, nine colonies of monarch butterflies – three in Michoacán and six in Estado de México - were recorded occupying a total of 7.24 acres of forest, this represents an increase of 64% in relation to the area recorded in the 2024-2025 winter with 4.42 acres. Five colonies were located inside of the Monarch Butterfly Biosphere Reserve (MBBR) occupying 5.61 acres of forest, and 4 were located outside of the MBBR occupying 1.63 acres. The colony of Atlautla, outside of the Monarch Region, occupied 0.005 acres of forest.

Introduction

The monarch butterflies (*Danaus plexippus* L.) from the eastern population of North America migrate every year at the end of the Summer from their breeding habitat in Canada and United States to Mexico. These butterflies establish their hibernation colonies in the forests of Michoacán and Estado de México, at the Neo-volcanic System, known as the Monarch Region (Fig. 1). The threats to the eastern monarch butterflies are i. decrease of milkweed plants in their breeding sites due to the use of herbicides, ii. land use changes in North America, and iii. climate change in their breeding sites (Brower *et al.*, 2012; Pleasants & Oberhauser, 2012; Zylstra *et al.*, 2021).

The forests of the Monarch Region also constitute one of the main freshwater contributors to the Cutzamala Hydrological System (Comision Nacional de Agua, 2005) (Fig. 1). The National Commission of Natural Protected Areas of Mexico (CONANP in Spanish) and World Wildlife Fund (WWF) have been monitoring systematically the monarch butterfly overwintering sites since the 2004-2005 winter. The second lowest area occupied by the monarch colonies in the last 30 years occurred in the 2023-2024 winter with 2.22 acres of forest; the lowest historical occupation occurred in the 2013-2014 winter with 1.66 acres, while the highest occupied recorded area was in the 1996-1997 winter, with 44.95 acres of forest (Rendón-Salinas *et al.*, 2022, 2023a & b, 2024). This report shows data collected from the area occupied by monarch butterfly colonies during the 2025-2026 winter season.

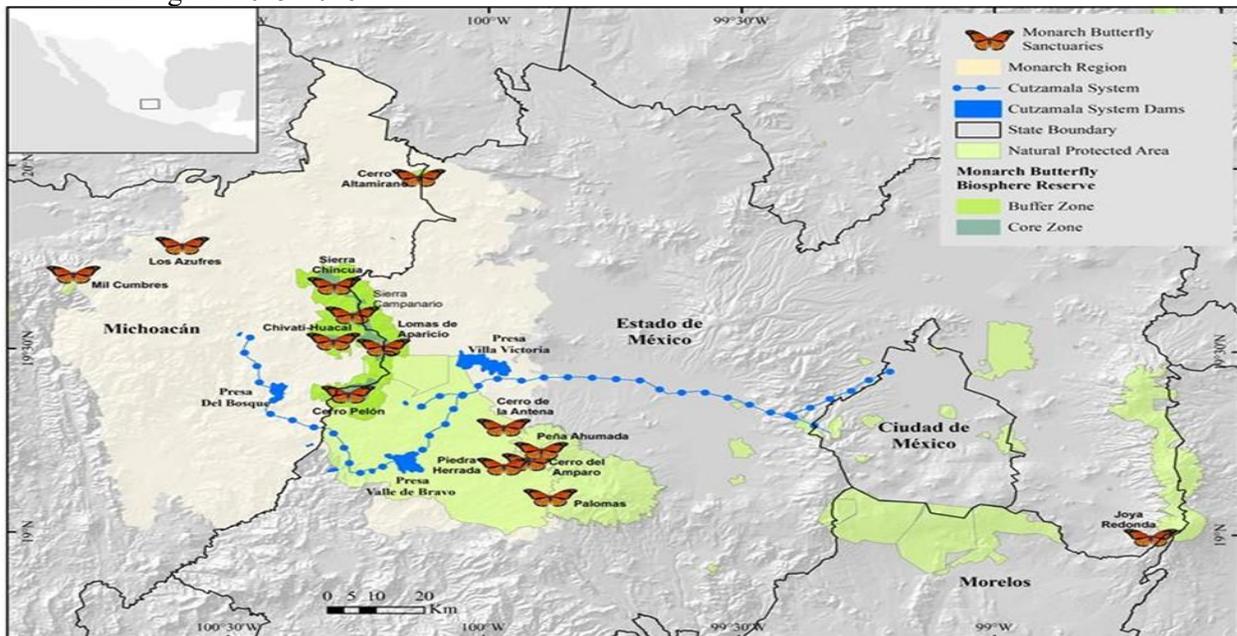


Figure 1. The Monarch Butterfly Biosphere Reserve (MBBR) is within the Monarch Region, located in the states of Michoacán and Estado de México. The forests of this region capture water for the Cutzamala Hydrological System.



Method

In December 2025, we started visiting and surveying each of the 13 overwintering sites (Sanctuaries) in the “Monarch Region”; when a colony was found its location was established with a GPS Garmin® Map 64 positioning device in UTM projection, with WGS 84 datum. The perimeter of the forest occupied by the butterflies was demarcated from the tree that was found on the highest point of the slope, then we recorded the direction and distance of the consecutive and peripheral trees of the colony (Calvert, 2004). The polygonal perimeter data was processed with the ArcGIS Pro geographic information system to establish the area occupied by the monarch butterfly colonies (Vidal & Rendón-Salinas, 2014; Rendón-Salinas *et al.*, 2023, 2024). The Joya Redonda colony at Atlautla was also surveyed, although its area is not registered in the historical graph as it is located outside of the Monarch Region (Fig.1).

Results

During the overwintering season of 2025-2026, nine colonies were recorded, three in Michoacán and six in Estado de México. Seven of them were registered during the second week of December 2025, and two of them during January 2026. The nine colonies occupied a total area of 7.245 acres of forest. Five colonies were located inside of the MBBR, occupying 5.611 acres of forest, and 4 were located outside of the MBBR occupying 1.634 acres (Table 1). This surface represents an increment of 64% compared to the occupied forest area in the 2024-2025 winter season, with 4.42 acres (Chart 1). The largest registered colony was in Ejido El Rosario, Michoacán, with 4.008 acres of forest, and the smallest one was registered in San Francisco Oxtotilpan, in the Sanctuary Cerro del Amparo with 0.077 acres. The colony of Atlautla, adjacent to the Iztaccíhuatl-Popocatepetl National Park, outside of the Monarch Region, occupied 0.005 acres of forest.

Table 1. Forest area occupied by monarch butterfly colonies in the 2025-2026 winter season.

Location	State	Sanctuary	Colony (Agrarian properties)	Area (acres)
Inside the Monarch Butterfly Biosphere Reserve (MBBR)	Estado de México	Cerro Pelón	E. El Capulín	*
			E. Mesas Altas de Xoconusco	*
			I.C. San Juan Xoconusco	*
			C.P. San Pablo Malacatepec	0.390
		Sierra Campanario	E. San Joaquín Lamillas	*
			E. La Mesa	0.620
	Michoacán	Cerro Altamirano	E. Contepec	*
			Cerro Pelón	E. Nicolás Romero
		Chivatí-Huacal	I.C. Carpinteros	*
			I.C. Donaciano Ojeda	*
			Sierra Campanario	E. El Rosario
		Sierra Chincua	State property	0.321
			Federal property	*
E. Cerro Prieto	*			
Lomas de Aparicio	E. El Calabozo Fracción 1	*		
	E. Crescencio Morales	0.272		
<i>Area occupied inside the MBBR</i>				5.611
Outside the MBBR	Estado de México	Cerro del Amparo	E. San Francisco Oxtotilpan	0.077
		Palomas	E. San Antonio Albarranes	1.112
		Piedra Herrada	E. San Mateo Almomoloa	0.106
		Peña Ahumada	E. Ojo de Agua	0.339
		Cerro de la Antena	E. El Potrero	*
	Michoacán	Los Azufres	S.P. San Andrés	*
		Mil Cumbres	E. Río de Parras	*
<i>Area occupied outside the MBBR</i>				1.634
<i>Total occupied area</i>				7.245

E= Ejido, I.C.= Indigenous Community, S.P.= Small Property, C.P.= Communal Property, * No colony present

Note: The colonies of Crescencio Morales and Ojo del Agua were measured in January^o

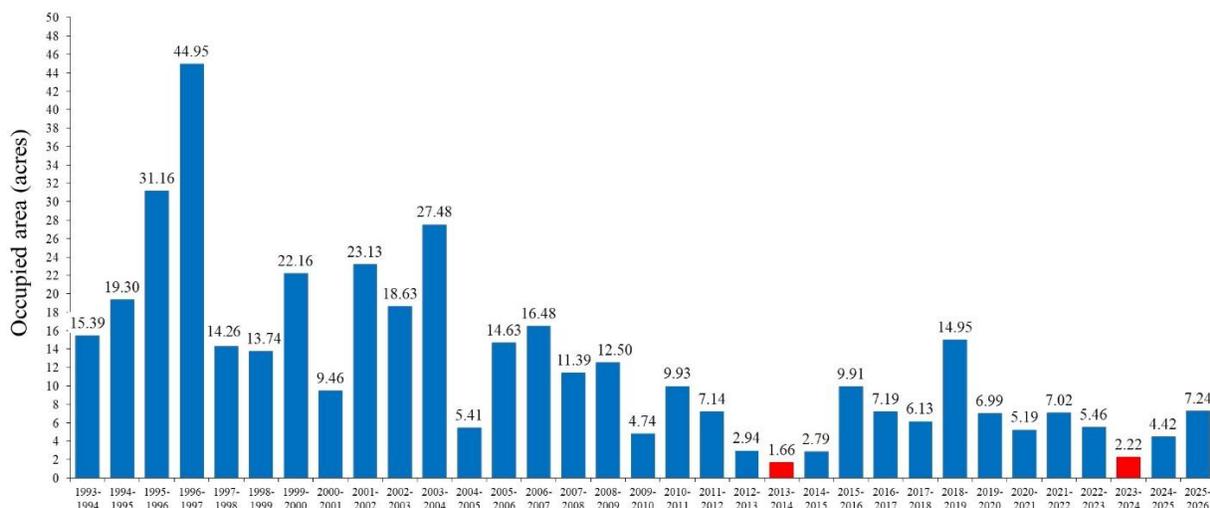


Chart 1. Forest area occupied by monarch butterfly colonies in Mexico from 1993-1994 to 2025-2026.

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