Self-declaration by Panama for a zone (the entire country with the exception of Darien province and the Embera-Wounnan region) free from New World Screwworm (*Cochliomyia hominivorax*).

Declaration sent to the OIE on 12 November 2020 by Dr Concepción Santos Sanjur, Delegate of Panama to the OIE, Director, Dirección Nacional de Salud Animal, Ministerio de Desarrollo Agropecuario

1. Situation in Panama regarding Myiasis caused by Cochliomyia hominivorax

A notifiable disease with respect to the competent national authorities In Panama, the Ministry of Agricultural Development (Spanish acronym, MIDA), through the offices of Animal Health and the Agricultural Quarantine Executive, has the objective of promoting, regulating and applying measures for the prevention, diagnosis, research, control and the eradication of animal diseases and/or pests. This is in order to protect the country's livestock and contribute to public health and environmental protection, as well as to enforce the Animal Health regulations related to the import and export of agricultural products.

Surveillance for Myiasis caused by *Cochliomyia hominivorax* is additionally carried out by the Panama – USA Commission for the Prevention and Eradication of Screwworm (COPEG), a programme formed by MIDA in 1994 (through a signed cooperative agreement). Additionally, Law 49 of 14 August 2001, that modifies Law 6 of 1993, establishes the shared responsibility of MIDA and COPEG for the sanitary control of the Control Zone (Darién Province and the Embera-Wounna region).

In Panama, Myiasis caused by *Cochliomyia hominivorax* is a mandatory notifiifiable disease with respect to the Animal Health Office of MIDA, and its epidemiological surveillance is supported by the legal instruments published in the Official Gazette of Panama.

- **Law 12 of 25 January 1973,** through which the Ministry of Agricultural Development was established, outlining its functions and powers.
- **Law 23 of 15 July 1997,** which empowers the Ministry of Agricultural Development through the Animal Health Office, to establish standards in matters of Animal Health, to be enforced by the latter together with the Agricultural Quarantine Office.
- **Resolution ALP 063-98,** which establishes control posts and inspection pens on a permanent or temporary basis, in such places as determined by COPEG, with the purpose of inspecting and certifying that animals in transit do not present symptoms of New World Screwworm (NWS).

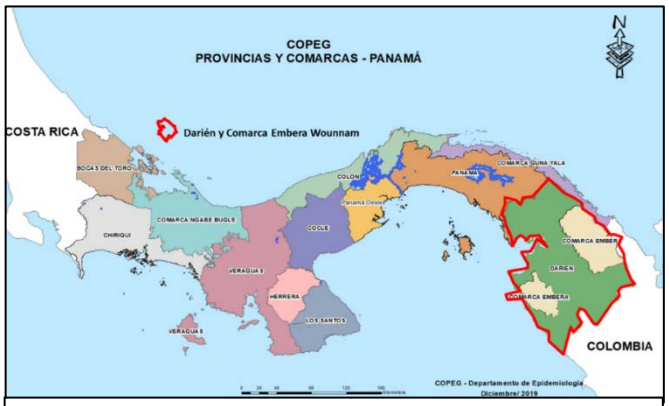
- **Law 13 of 6 May 1999**, through which the Cooperation Agreement between MIDA and the United States Department of Agriculture is adopted for the Eradication and Prevention of New World Screwworm, including a Supplementary Cooperative Agreement and other provisions.
- **Resolution ALP 030-ADM-02 of 28 August 2002; and DAL-073-ADM-08 of 31 October 2008**, establish the requirements for the movement of animals within the country.
- **Law 49 of 14 August 2001**, which modifies Law 6 of 1993 and establishes procedures for the marketing of cattle and buffalo herds from livestock farms.

2. History of absence or eradication of Myiasis caused by *Cochliomyia hominivorax*

Panama has not experienced any cases of myiasis due to *Cochliomyia hominivorax* since 2001; this occurred in the western area of the country between the Panama Canal and the border with Costa Rica. In the eastern area of the country, from the Panama Canal to the border with Colombia, and with the exception of three outbreaks that were detected and eradicated in 2009[1] and 2012[2], respectively, positive cases of myiasis have been detected only in the Darién province, which is an area where sanitary control measures are permanently applied, and is part of the so-called Permanent Biological Prevention Barrier (Map 1), formed by the weekly dispersal of sterile insects on a continuous basis, including 20 nautical miles within Colombian territory.

The Darién province and the Embera-Wounnan region, established by its risk mitigation measures to NWS as the Infected Zone, has experienced re-infestation by *Cochliomyia hominivorax* from endemic areas of Colombia (Map 1).

Based on Law 23 of 15 July 1997, and taking into account that myiasis caused by *Cochliomyia hominivorax* is included in the group of mandatory notifiable diseases by the OIE. The epidemiological surveillance system of Panama uses the current list of diseases of the OIE, established in Chapter 1.3 of the Terrestrial Code (as indicated in article 15, section 5 of the aforementioned standard), as the basis for the application of the mandatory notification of diseases. As of 2006, Panama (with the exception of the Darien province and the Embera-Wounnan region) is considered free from the disease and therefore all cases diagnosed as positive for this disease detected in the free zones and the Infected Zone require mandatory notification to the National Animal Health Office of MIDA, by the COPEG which is the Commission primarily responsible for its diagnosis (Law 23 of 1997, article 15, point 5; and article 19).



Map No.1 Province and regional division of Panama – NWS infected zone

As of 2008, the United States Department of Agriculture (USDA) excludes Panama from the lists of regions where screwworm is present.

- **Federal Register / Vol. 73, No. 169 / Friday, August 29, 2008** / Rules and Regulations Executive Order 12866 and Regulatory Flexibility Act, this rule has been reviewed under Executive Order 12866. For this action, the Office of Management and Budget has waived its review under Executive Order 12866. This final rule amends regulations regarding imports of live horses, ruminants, pigs and dogs, by removing Panama from the lists of regions where screwworm is considered to exist.

[1] OIE WAHIS Report Ref. 8168
[2] OIE WAHIS Report Ref. 11962

3. Surveillance and early warning systems for all species

3.1 Epidemiology

The Ministry of Agricultural Development, through the National Animal Health Office, maintains an epidemiological surveillance system on the at-risk animal population, in order to prevent cross-border diseases from entering the country, as well as to prevent, control and eradicate myiasis caused by NWS (*Cochliomyia hominivorax*), and other exotic diseases of animals, as stated in Resolution DAL-073-ADM-08 of 31 October 2008.

MIDA has strategically divided Panama into five zones referred to as "Zoosanitary Zones", which are delimited by phyto-zoosanitary cordons, and controlled by Internal Control Posts for Animal Movements, so as to maintain control on all diseases of zoosanitary importance for the country.

Additionally, the country maintains a Western Cross-Border Disease Surveillance System (Spanish acronym, SIVET/MIDA), led by veterinarians and agricultural technicians from MIDA, and based on a non-random epidemiological surveillance system of sentinels for NWS myiasis, covering an area from the western part of the country to the border with Costa Rica (Annex 1 Map of SIVET Sentinels west).

COPEG, through a mixed (passive/active) surveillance system, is responsible for ensuring the rapid detection of notifications of suspected myiasis caused by NWS in the eastern part of the country, including the Darién province and the Embera-Wounnan region (infection zone). The surveillance includes visits to farms through two epidemiological systems, one consisting of non-random sentinel surveillance that includes more than 800 farms, that are geographically representative and selected according to their high-risk level to NWS (monthly visits), in addition to quarterly visits to farms whose access is basically via waterways.

The criteria for selection of high-risk farms include:

- The farm has been affected by NWS from 2006 (the country was stablished as free from NWS since 2006).
- The farm has a bovine population higher than 200 animals.
- The farms production purpose is breeding (NWS affects mostly the navel of calves).
- The farm has an inadequate sanitary program.

The country is divided into five zones supervised by veterinarians and attended by agricultural technicians (Annex 2 SIVET COPEG map). Furthermore, animal movement control posts are also maintained in strategic exit points from the infection zone (province of Darién and the Embera-Wounnan region), and in the western part of the country (Annex 12 Epidemiological surveillance system – Surveillance zones/Panamá).

Important information generated by both SIVET MIDA and COPEG is collected through two field data forms (Annex 3 Farm visit form and Annex 4 technical assistance) and analysed for decision-making purposes (Annex 5 Annual field and dispersal report 2018).

- Law 6 of 30 March 1993, which replaces decree 121 of 12 May 1966 Articles 8 and 11. Control and inspection zone in Darién, animal movement permits.
- Resolution DAL-073-adm-08 Panama 31 October 2008 and its modifications Third Resolution: numerals 10 to 15. Ministry of Agricultural Development (MIDA), maintains an epidemiological surveillance system for the prevention, control and eradication of diseases such as: FMD, Brucellosis, Bovine Tuberculosis and New World Screwworm (*Cochliomyia hominivorax*)

3.2 Diagnosis of Myasis

Myiasis samples collected through the epidemiological surveillance system of DINASA/MIDA, the Public Health System and/or COPEG are diagnosed by the NWS Diagnosis and Identification Unit of the Quality Control Department of COPEG, whose objective is to diagnose samples of myiasis at all life stages of *Cochliomyia hominivorax* and identity all species causing myiasis (Annexe 6 and Annex 7 National and international sample format).

As a taxonomic reference, the unit relies on the Identification Manual for NWS by *Cochliomyia hominivorax* (Coquerel), Diptera: Calliphoridae and its differentiation from other myiasis-causing species - Mexican-American Commission for the Eradication of NWS.

The Diagnostic Unit identifies the taxonomy of *Cochliomyia hominivorax* through stereoscopic or microscopic morphology, as well as different families of Calliphoridae, Muscidae, Sarcophagidae and Oestroidea, among others, that can be differentiated with the support of taxonomic references. From 1998 to February 2020, the Diagnostic Unit has identified 22,009 samples, of which 14,568 were found positive for NWS.

From 2006 to December 2019, 2,063 myiasis samples have been collected throughout the country, 312 of which were found positive for NWS, of which 287 cases were detected in the Darién province and one (1) in the Embera-Waunnan region (Infected Zone), one (1) positive case in a human during the outbreak in Colón/2009 and none in the wildlife of the 30 myiasis cases that were detected (Tables 1, 2, Annex 10 and Annex 11).

Table 1: Detection of myiasis samples in Panama, 2006 to 2019 - (Database Collection and dispatch of samples (myiasis) / Diagnostic Unit COPEG)

	2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		TOTAL	
Diagnóstico de GBG	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Animales Domésticos	2	230	7	116	5	169	19	290	5	104	14	109	48	177	2	125	6	112	20	114	67	82	28	81	8	80	80	79	311	**1868**
Fauna Silvestre	0	2	0	1	0	2	0	3	0	2	0	3	0	2	0	0	0	2	0	1	0	2	0	0	0	1	0	9	0	**30**
Humanos	0	13	0	7	0	11	1	17	0	5	0	16	0	20	0	12	0	11	0	17	0	6	0	15	0	13	0	2	1	**165**
TOTAL	**2**	**245**	**7**	**124**	**5**	**182**	**20**	**310**	**5**	**111**	**14**	**128**	**48**	**199**	**2**	**137**	**6**	**125**	**20**	**132**	**67**	**90**	**28**	**96**	**8**	**94**	**80**	**90**	**312**	**2063**

Table 2: Detection of NWS myiasis in Panama by province, 2006 to 2019 - (Database Collection and dispatch of samples (myiasis) / COPEG)

COPEG-Casos GBG por Provincias															
2006-2019															
Provincias	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**TOTAL**
COLÓN	0	0	0	17	0	0	1	0	0	0	0	0	0	0	18
DARIÉN	2	7	3	2	4	14	45	2	6	20	67	27	8	80	287
COMARCA EMBERÁ-WOUNAAN(Darién)	0	0	2	1	1	0	0	0	0	0	0	1	0	0	5
PANAMÁ	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL	2	7	5	20	5	14	48	2	6	20	67	28	8	80	312
Base de Datos Miasis -COPEG 2019															

Bovine was the species most affected with 253 cases which represents 81% of affected hosts (Table 1). Additionally, a case was detected in humans during the 2009 outbreak in the province of Colon (that case is not included in Annex 11).

4. Measures to maintain freedom of Myasis by *Cochliomyia hominivorax* in the free area of Panama and the infected zone (Darién province)

4.1 Epidemiological surveillance and notifications of domestic animals

The MIDA / COPEG Cross-border Disease Surveillance System maintains programmes that encourage timely notifications of myiasis in general, with an emphasis on NWS, as well as knowledge about the disease and its prevention. Furthermore, the Department of Health Education - COPEG has developed comprehensive training programmes highlighting best practices in animal husbandry and NWS prevention, aimed at different target groups such as the following:

- Sentinels identified at the national level that provide information to the surveillance system on suspected cases of myiasis. These include the MIDA Regional and Sub-Regional Offices, agricultural warehouses, health centres, livestock auctions, slaughterhouses/abattoirs, agricultural university centres and veterinary clinics, among others.
- Active groups of honorary inspectors who receive annual training (Annex 8 List of attendance of honorary inspectors and photos)
- Organisation of livestock sector events (field days, meetings, fairs, talks, etc.)
- NWS simulation exercises with the participation of COPEG, MIDA, Ministry of Health, Ministry of the Environment, University of Panama and the International Regional Organisation for Agricultural Health - OIRSA (Annex 9 Report IV NWS Simulation - COPEG- / Panama and Annex 20).

Reports of suspected myiasis or of a sample provided to SIVET MIDA or COPEG, are directly encouraged with respect to producers and field workers, or through free telephone lines (800-2673), social networks and websites (included in Tables 1 and 2). An immediate response is provided by the veterinarians of the respective zone and samples are taken and/or received, which are then dispatched through a range of prepared channels to the Diagnostic Unit.

4.2 Epidemiological surveillance and notifications in wildlife

One of the objectives of the Ministry of the Environment (MiAmbiente), is the administration of the environment in terms of its protection, conservation and recovery. It does this by promoting the sustainable use of natural resources. It also regulates the conservation of wildlife, along with the related different components, elements, categories and manifestations. This work is carried out through the National Protected Areas and Wildlife Office, which coordinates animal health interventions with MIDA if any signs or symptoms are found that are compatible with zoonotic and/or mandatory notifiable diseases, such as myiasis caused by *Cochliomyia hominivorax*.

Through its Manual of basic techniques in the Rescue and Rehabilitation of Panamanian Wildlife, Article XV Zoonosis, the Ministry of the Environment indicates that if someone encounters an animal with symptoms, such as highly visible parasites (NWS myiasis), they should contact the National Animal Health Office of the Ministry of Agricultural Development in order to provide notification and receive assistance. Similarly, those concerned should contact the National Ecological Health Office of the National Police or the Centre for the Rescue and Rehabilitation of Wild Fauna of the Pan-American Association for Conservation (Spanish acronym, APPC).

- Law 24 of 7 June 1995, establishes that all wildlife form part of the natural heritage of Panama and establishes their protection, conservation, restoration, research, management and the development of genetic resources, including rare species and other forms of wildlife.
- Law 41 of 1 July 1998, the General Law of the Environment of the Republic of Panama, includes the reforms approved by Law 18 of 2003, Law 44 of 2006, Law 65 of 2010 and Law 8 of 2015.
- Resolution AG-0172-2004 of 19 May 2004, regulates matters relating to endangered species of fauna and flora that are in danger of extinction.

4.3 Risk mitigation measures regarding the introduction of myasis by *Cochliomyia hominivorax* from Darien province and the Embera-Wounnan region to the free zone of Panamá

4.3.1 Measures to prevent the introduction of NWS into the free zone of Panama

- Animal movement control: all animals originating from the Darien province are inspected at the 3 control posts (Map 2) to determine presence of myasis (a total of 4,460 shipments, 32,530 bovines - Annex 13 and Annex 14), and ensuring the status of the provinces and regions included in the NWS free zone to which this shipments can be directed. During 2019, the final destination of the majority of bovine inspected (21,810) was the Panama province. For each shipment, COPEG issues an inspections certificate, which contains information of farm origin and final destination of animals, that is recorded in a database. If myasis is identified, the animal is kept at the facilities (for 72 hours), samples are collected, and the animal is treated. Shipments that are directed to the western part of the country are verified at the last control post located in Capira, West Panama Province (Annex 10).

- Surveillance of farms in the Darien province and the Embera-Wounnan región in each epidemiological zones are visited monthly for selected high-risk farms in Zone 2 and visited every four months for moderate-risk farms. All farms in Zone 1 (bordering Colombia) are visited monthly (Map SIVET COPEG).
- Surveillance of the domestic susceptible population (1,342,062 animals) in the NWS free zone (zones 3 to 9) with a predominance of cattle (1,074,730) by monthly visits to sentinel farms, with an accumulated monthly minimum tolerance range of 80% of farms per year in eastern Panama monitored by COPEG, and 55% of farms per year in the western Panama monitored by MIDA. During 2019, 7,827 visits were made to sentinel farms, with an average coverage of 60% in the eastern part and 83% in the western part of the free zone of the country (Annex 15, Annex 16, and Annex 17). Epidemiological information is collected through controlled forms and entered in its respective database (Annex 11).
- Follow up of all positive cases through epidemiological investigation of farms within a 5km radius (Annex 18), and another follow up 21 days post diagnosis.
- Sanitary awareness campaigns via media, meetings with producers, and schools of the Darien province and the Embera-Wounnan region (included in Annex 5).
- Entomological diagnosis of myasis in the COPEG diagnostic unit, Pacora, Panama (Table 1).
- Control of the etiological agent through weekly aerial dispersal of sterile insects (Annex 19) in the endemic area.

4.3.2 Mitigation measures in free zones

As established by Article 13 of Law 23 issued on 15 July 1997, the measures taken by MIDA are based on scientifically accepted principles established by the OIE, in terms of a law that also empowers the Ministry to establish the zoosanitary requirements that must be met for the introduction of animals into the country, along with their products and by-products.

In Panama, there is a legal prohibition of imports of animals that include their products, by-products and international waste, originating in or from South America. This is aimed at the prevention of FMD, and it is a measure that also contributes towards the prevention and introduction of myiasis caused by NWS, given that it is the geographic area consisting of endemic countries of *Cochliomyia hominivorax* that represents a greater risk of NWS introduction into Panama.

- Resolution No. ALP-024-ADM-01 of 19 March 2001: Prohibits the importation of animals, their products, by-products and international waste originating in or coming from Europe, South America (with the exception of Chile), and other countries affected by FMD.

- Law 35 of 16 June 2008: Modifies Law 6 of 1993, regarding the movement of cattle from the control zone, and also sets down other provisions.

Agricultural quarantine (Executive Office of Agricultural Quarantine - DECA) with respect to the Ministry of Agricultural Development (MIDA)[3], consists of the restriction imposed by the country's health authorities with the aim of preventing the introduction and spread of diseases. These authorities are tasked with inspecting all cargo subject to quarantine that enters through seaports, airports and land border crossings. Furthermore, all animals must be placed in quarantine in the authorised quarantine stations (Tocúmen and Paso Canoas in Chiriquí), and these authorities must also control the internal movement of larger and smaller animals in the country.

All animal imports must comply with the procedures and zoosanitary requirements for imports or entry into the country such as: forms to request an import license, a phytozoosanitary license and the corresponding veterinary inspection[4]. Also, in some cases pets must remain under quarantine custody (DECA)[5]. Requirements for the imports of dogs and cats include a complete vaccination certificate and a veterinary certificate of good health[6].

[3] Agricultural quaratine
[4] Information for the introduction of small animals into Panama
[5] National quarantine for small animals
[6] Requirements for importation of cats and dogs

The Integrated Phytozoosanitary System for Imports, Movements and Exports of the Executive Office of Agricultural Quarantine of MIDA, maintains control over imports of animals and products, referring all importers and users to the Manual for users or importers as a guide for imports.

The Ministry of Health, through the Department of Zoonotic Control, and based on Decree 1132 (issued on 20 August 1970) and Resolution 183 of 20 August 2001 (Annex 10, Ministry of Health Resolution), is responsible for ensuring that the introduction of pets (dogs and cats), into the country, through authorised points of access, complies with the health parameters; (this is undertaken) jointly with MIDA.

5. Conclusions

Considering that:

- Panama has not presented any cases of myiasis caused by *Cochliomyia hominivorax* since 2001 in the western area of the country, i.e., from the Panama Canal to the country's border with Costa Rica. In the eastern area, except for two outbreaks detected and eradicated in 2009 (1) and 2012 (2), positive cases of NWS myiasis have been detected only in the province of Darién (Infected Zone).
- Panamanian legislation establishes the surveillance measures for myiasis caused by *Cochliomyia hominivorax* and its mandatory notification to the OIE.
- Panama has complied with the pertinent articles in the *Terrestrial Animal Health Code (Terrestrial Code)* of the OIE to self-declare a zone free from myiasis caused by *Cochliomyia hominivorax.*
- The epidemiological surveillance system, which includes, among other measures, the monitoring of the animal population in the field, the detection of cases and diagnosis of NWS samples, has the capacity to detect myiasis caused by *Cochliomyia hominivorax* in a timely manner.
- The respective ministries of Agricultural Development and Health, backed by national legislation, maintain quarantine measures to prevent imports of animals and products into the country that represent a significant risk for the introduction of myiasis caused by *Cochliomyia hominivorax*.

The OIE Delegate of Panama declares that Panama complies with the requirements for a zone (the entire country with exception of Darien province and the Embera-Wounnan region) free of myiasis by Cochliomyia hominivorax, as of 1 January 2020, in accordance with Chapters 1.4 (Article 1.4.6. point 2), 1.6. and 8.12. of the OIE *Terrestrial Code* (edition 2019) and consistent with the information provided to the WAHIS.

MIDA

DIRECCIÓN NACIONAL DE SALUD ANIMAL
DESPACHO DEL DIRECTOR

Declaración que acompaña el documento de autodeclaración

Yo, el/la abajo firmante, **Concepción Santos Sanjur**, Delegado de **Panamá** ante la Organización Mundial de Sanidad Animal (OIE), asumo la responsabilidad de la autodeclaración de ausencia de **Miasis por *Cochliomyia hominivorax*** (enfermedad).

ADVERTENCIA

La OIE, tras realizar un examen administrativo y técnico de una autodeclaración sobre la condición libre de enfermedad de un país, zona o compartimento ("autodeclaración"), según lo descrito en los procedimientos operativos estándar para las autodeclaraciones, se reserva el derecho de publicar o no la autodeclaración en su sitio web. Esta decisión es inapelable y no existe ninguna posibilidad de recurso.

La publicación de una autodeclaración en el sitio web de la OIE no refleja la opinión oficial de la OIE.

La responsabilidad por la información contenida en una declaración recae por completo en el Delegado de la OIE del Miembro concernido.

Ni la OIE ni persona alguna que actúe en su nombre podrán ser consideradas responsables de:

(i) cualquier error, inexactitud u omisión en el contenido de una autodeclaración;
(ii) el uso que se haga de la información que figura en una autodeclaración;
(iii) cualquier consecuencia directa o indirecta de toda índole que se derive o se relacione con el uso de la información contenida en una autodeclaración.

Ciudad de Panamá, 15 de junio de 2020.

Atentamente,

Dr. Concepción Santos Sanjur
Director Nacional de Salud Animal
Delegado de Panamá ante la OIE

República de Panamá
DIRECCIÓN NACIONAL DE SALUD ANIMAL
MINISTERIO DE DESARROLLO AGROPECUARIO
DIRECCIÓN

REPÚBLICA DE PANAMÁ
MINISTERIO DE DESARROLLO AGROPECUARIO

RIO TAPIA – TOCUMEN
Teléfono: (507) 524-2211 (507) 524-2214