



# Strong Cold Fronts: A Danger to Pelicans and Motorists along the Lower Texas Coast

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## Introduction

Motorists traveling along the lower Texas coast will often encounter brown pelicans on bridges during strong cold frontal passages early in the winter season. Although the exact cause is an area of ongoing research, the combination of large temperature falls with strong winds and any precipitation appear to contribute to the 3-5 foot tall, 5-10 pound birds seeking out warm water and possibly wet roadways by mistake.



The Brown Pelican or "Brown Bomber" (*Pelecanus occidentalis*). Photos courtesy of Jim Campbell, Retired - NWS Brownsville/Rio Grande Valley, TX

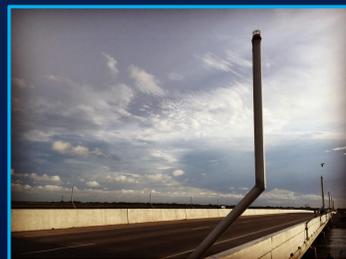
## Response Efforts

After large pelican losses during the 2013-14 winter season, TxDOT installed multiple 8 foot tall poles every 15 feet along favored pelican landing areas, including Texas State Highway 48, the main route between Brownsville and South Padre Island, in an attempt to deflect birds from landing on bridges. Other efforts to alert motorists about the possible pelican hazard prior to and during these events include road signs (mobile and permanent), news articles and reports, weather briefings, and social media posts.



LEFT: State Highway 48 and common pelican event areas.

BOTTOM RIGHT: One of multiple road signs near the Queen Isabella Memorial Bridge between Port Isabel & South Padre Island.



BOTTOM LEFT: Bird and pelican deterrent poles installed along either side of the Carl "Joe" Gayman Bridge near Bahia Grande - known pelican roosting grounds.



## 2016-2017

On December 8<sup>th</sup>, 2016, an arctic cold front with gale force winds and light to moderate rain worked through Deep South Texas, plunging temperatures nearly 40 degrees Fahrenheit in 36 hours. On portions of Highway 48, over 70 pelicans were struck and killed by motorists. Two similar events over the next month brought total pelican deaths to over 100 for the season.

### 2016-2017 Winter - Over 100 Pelicans Killed During 3 Cold Fronts

Wed. Dec. 7<sup>th</sup>, 2016  
80°F at 2pm  
Winds 16 mph

Thu. Dec. 8<sup>th</sup>, 2016  
53°F at 2pm  
Winds 30 mph  
Gusts to 40 mph

Fri. Dec. 9<sup>th</sup>, 2016  
42°F at 2am  
Winds 27 mph  
Gusts to 38 mph

**70+** Pelicans Killed

Rainfall: 0.49"

Sat. Dec. 17<sup>th</sup>, 2016  
83°F at 2pm  
Winds 24 mph  
Gusts to 40 mph

Sun. Dec. 18<sup>th</sup>, 2016  
43°F at 2pm  
Winds 25 mph  
Gusts to 33 mph

Mon. Dec. 19<sup>th</sup>, 2016  
40°F at 2am  
Winds 21 mph

**12+** Pelicans Killed

Rainfall: 0.02"

Thu. Jan. 5<sup>th</sup>, 2017  
76°F at 2pm  
Winds 6 mph

Fri. Jan. 6<sup>th</sup>, 2017  
39°F at 2pm  
Winds 22 mph  
Gusts to 32 mph

Sat. Jan. 7<sup>th</sup>, 2017  
34°F at 2am  
Winds 22 mph  
Gusts to 33 mph

**19+** Pelicans Killed

Rainfall: 0.03"

An Estimated 24+ Pelicans Were Saved Over These Events

Event summaries using Port Isabel/Cameron County (PIL) ASOS data. A volunteer pelican watch was created following the December 8<sup>th</sup> event. TxDOT and wildlife officials began researching potential solutions.

## 2017-2018

A cold front on December 8<sup>th</sup>, 2017, with a nearly identical temperature drop to the previous year's initial event, coincided with at least 30 pelican deaths, followed by single digit pelican deaths into early 2018.

### 2017-2018 Winter - Over 32 Pelicans Killed During 3 Cold Fronts

Tue. Dec. 5<sup>th</sup>, 2017  
85°F at 2pm  
Winds 15 mph  
Gusts to 28 mph

Wed. Dec. 6<sup>th</sup>, 2017  
48°F at 2pm  
Winds 25 mph  
Gusts to 30 mph

Thu. Dec. 7<sup>th</sup>, 2017  
46°F at 2am  
Winds 23 mph  
Gusts to 32 mph

**30+** Pelicans Killed

Rainfall: 0.13"

Mon. Jan. 15<sup>th</sup>, 2018  
72°F at 2pm  
Winds 17 mph  
Gusts to 27 mph

Tue. Jan. 16<sup>th</sup>, 2018  
36°F at 2pm  
Winds 21 mph  
Gusts to 35 mph

Wed. Jan. 17<sup>th</sup>, 2018  
Data Missing  
Due to FZRA

**2+** Pelicans Killed

Rainfall: 0.03"+

Sat. Feb. 10<sup>th</sup>, 2018  
79°F at 2pm  
Winds 23 mph  
Gusts to 29 mph

Sun. Feb. 11<sup>th</sup>, 2018  
55°F at 2pm  
Winds 25 mph  
Gusts to 36 mph

Mon. Feb. 12<sup>th</sup>, 2018  
42°F at 2am  
Winds 14 mph

**0** Pelicans Killed

Rainfall: Trace

An Estimated 300+ Pelicans Were Saved Over These Events

Event summaries using Port Isabel/Cameron County (PIL) ASOS data. Increased awareness of contributing conditions, better organization of volunteer groups, and effective messaging saved more pelican lives.

## Pelican Watch

Volunteer pelican watch groups have banded together with Texas Wildlife officials, law enforcement, and university faculty to stage in known landing areas along Highway 48, physically helping pelicans off of roadways and bridges, while alerting motorists to the potential hazard.



Volunteers, Texas Wildlife officials, and members of law enforcement work to save pelicans on December 6<sup>th</sup>, 2017, while alerting passing motorists. Photos courtesy of Dina Arévalo - Port Isabel-South Padre Press

## Looking Ahead

During the 2017-2018 events, more than 300 pelicans were reportedly saved due to efforts from volunteers, law enforcement, news media, and the National Weather Service in Brownsville. Through early pattern recognition and effective messaging, we hope to continue to keep motorists, volunteers, law enforcement, and our brown pelicans safe during future events.

**Watch For Pelicans**

**Strong Cold Front Expected**  
Tue. High: 78-84 Tue. Night Low: 51-57  
Wed. High: 54-60 Wed. Night Low: 47-53  
North Winds 25-35 mph, Gusts 40+  
60% Chance of Showers

**CAUTION** **SLOW**

**Most Impacted Areas:**  
Queen Isabella Causeway to SPI  
Bahia Grande/Gayman Bridge Area  
on Highway 48

**Note:**  
Volunteers and members of local law enforcement may be in the area or on the roadways. Drive with caution!

A graphic created in early December 2017. This graphic, and updated versions, were attached to partner briefings, published on the office webpage, and shared through all social media outlets during the event.