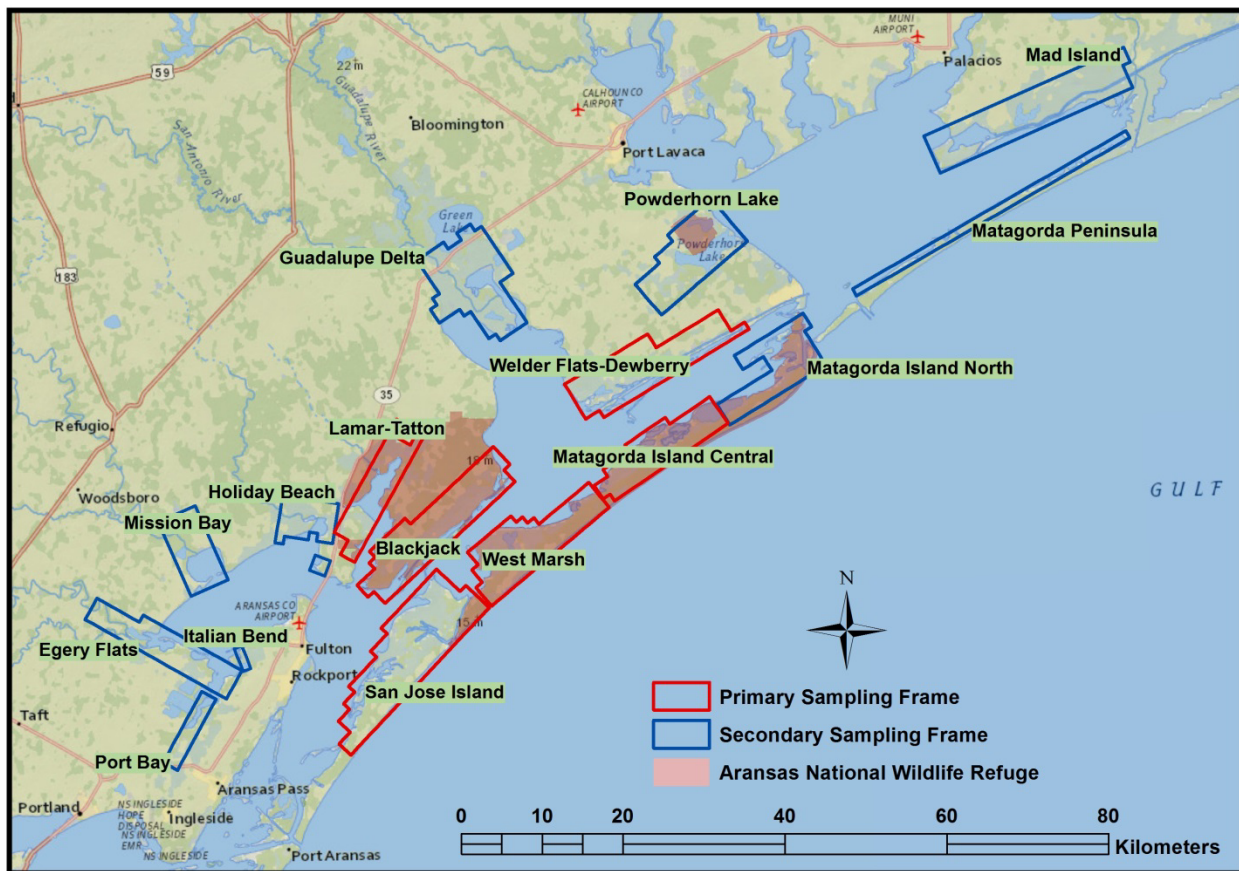


March 16, 2015

## Whooping Crane Survey Results: Winter 2014–2015

*308 Wild Whooping Cranes Estimated*

The U.S. Fish and Wildlife Service has completed aerial surveys of the primary survey area centered on Aransas National Wildlife Refuge to estimate the abundance of whooping cranes in the Aransas-Wood Buffalo population. Preliminary analyses of the survey data indicated 308 whooping cranes (95% CI = 267–350; CV = 0.067) inhabited the primary survey area (Figure 1). This estimate included 39 juveniles (95% CI = 33–46; CV = 0.081) and 112 adult pairs (95% CI = 99–128; CV = 0.064). Recruitment of juveniles into the winter flock was 15 chicks (95% CI = 13–16; CV = 0.055) per 100 adults, which is comparable to long-term [average recruitment](#). The precision of this year's estimates was improved and achieved the target set in the [whooping crane inventory and monitoring protocol](#) (i.e., CV < 0.10).



**Figure 1.** The sampling frame used to monitoring whooping crane abundance on their wintering grounds along the Texas coast of the Gulf of Mexico, USA.

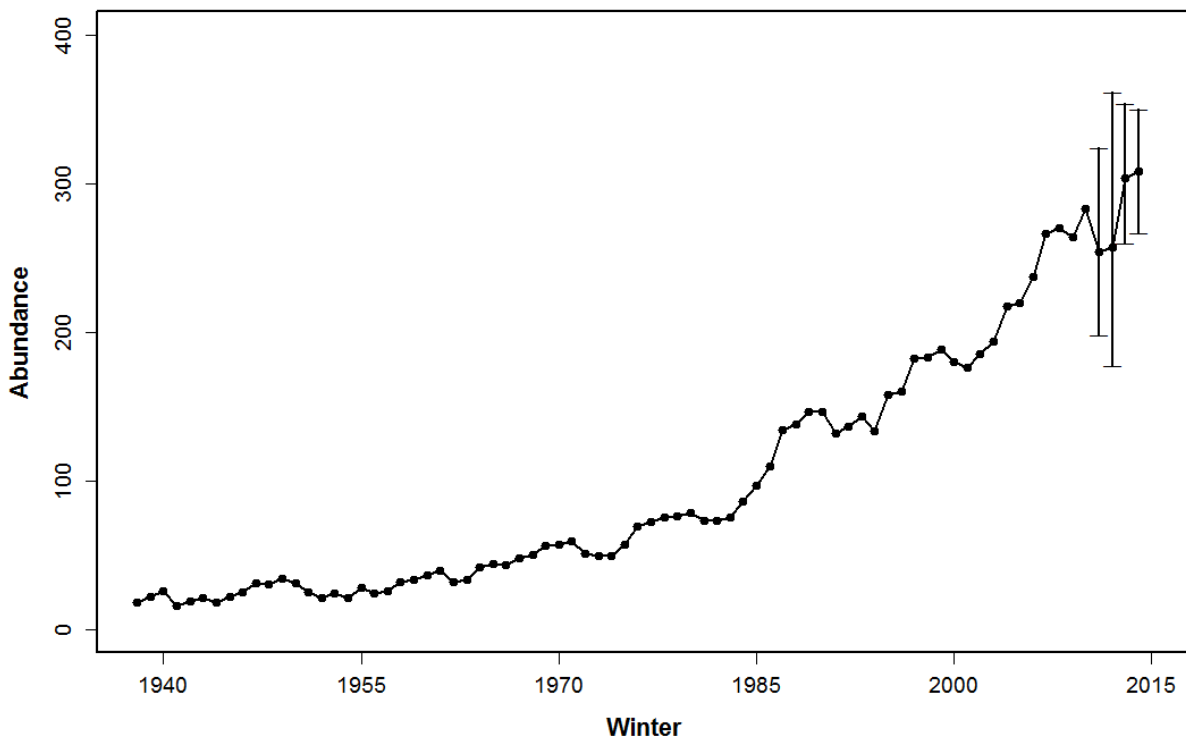
A continued upward trend in whooping crane abundance over the last four years was observed (Table 1), which is consistent with the long-term trend of approximately 4% growth per year. Examination of the 77-year trend in whooping crane abundance shows an increase with occasional, [periodic declines](#) occurring, on an approximate 10-year cycle (Figure 2).

**Table 1. Preliminary whooping crane abundance estimates for the Aransas-Wood Buffalo population on their wintering grounds, winter 2011–2012 through winter 2014–2015.**

Survey year	Abundance <sup>a</sup>	CV	95% CI		No. assumed beyond primary survey area <sup>b</sup>
			LCL	UCL	
winter 2011–2012	254	0.126	198	324	13
winter 2012–2013	257	0.186	178	362	22
winter 2013–2014	304	0.078	260	354	6
winter 2014–2015	308	0.067	267	350	6

<sup>a</sup> Estimated whooping crane abundance in the primary sampling area using aerial surveys and hierarchical distance sampling.

<sup>b</sup> Provides our best understanding of the number of whooping cranes, at the time of the aerial surveys, that were outside of the primary survey areas. This information was based on data from Texas Whooper Watch, the whooping crane GPS tracking study, and aerial surveys conducted in the secondary survey areas.



**Figure 2. Time-series of whooping crane abundance estimates for the Aransas-Wood Buffalo population beginning in winter 1938–1939. Starting in winter 2011–2012, the precision of abundance estimates were displayed as 95% confidence intervals (these are preliminary estimates). During years prior to winter 2011–2012, the precision of abundance estimates was unknown.**

During winter 2014–2015, the primary survey area (approximately 153,950 acres; Figure 1) was surveyed six times during December 8 through December 13, 2014. During the same period, the secondary survey area (approximately 153,200 acres; Figure 1) was surveyed to monitor ongoing expansion of the whooping crane’s occupied winter range. All secondary areas were surveyed twice

except Mad Island and Matagorda Peninsula, which are recent additions to the secondary survey area. Those two areas were surveyed once during December 2014 and surveyed again in January 2015.

During the survey period, some whooping cranes were observed outside of the primary survey area. These data were based on information from [Texas Whooper Watch](#), the whooping crane GPS tracking study, and aerial surveys conducted in the secondary survey areas. Compared to winter 2011–2012 and winter 2012–2013, few whooping cranes were observed outside of the primary survey area (Table 1).

Table 2 provides our best understanding of whooping cranes that were outside the primary survey areas during the mid-December survey period. Some birds may have been missed. It is impossible to be absolutely certain that individuals did not move between these locations and to/from the primary survey area during the survey period.

**Table 2. Whooping cranes documented outside of the primary survey area during December 8 through December 13, 2014.**

General area	Data source	Adults	Chicks	Total	Notes
North Matagorda Island (secondary survey area)	Aerial survey GPS tracking study	2	0	2	Pair detected at least once during aerial surveys; one individual was marked as chick in Canada in 2012.
Holiday Beach (secondary survey area)	Aerial survey	2	0	2	Pair detected twice during aerial surveys on different days and locations.
Powderhorn Lake (secondary survey area)	Aerial survey	2	0	2	Pair detected twice during aerial surveys on different days at same location.

*The data and results presented in this report are preliminary and subject to revision. This information is distributed solely for the purpose of providing the most recent information from aerial surveys. This information does not represent and should not be construed to represent any U.S. Fish and Wildlife Service determination or policy.*