

2022 WC Science Plan

Mallory Jaymes

Contribute to the survival of whooping cranes during migration

Species performance indicators

- Area of suitable roosting and foraging habitat
- Proportion of population
- Length of Stay





2021 Monitoring

Spring

- 6 unique WC
- 1.19% of AWB Population
- 64 crane use days
- 520-3,250 cfs at WC use sites

Fall

- 88 unique WC
- 17% of AWB Population
- 522 crane use days
- 203-2,110 cfs at WC use sites

EBQ #1-3 WC response to channel width

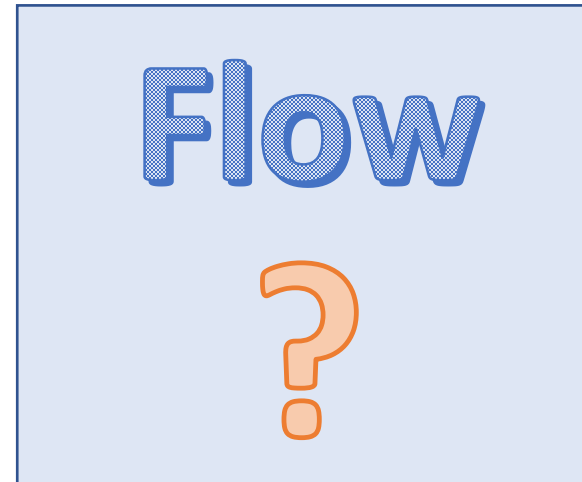
- EBQ #1 How effective is it to use Program water to maintain suitable whooping crane roosting habitat?
- EBQ #2 How effective is Program management of *Phragmites* for maintaining suitable whooping crane roosting habitat?
- EBQ#3 Is sediment augmentation necessary to create and /or maintain suitable whooping crane habitat?

EBQ #4-6 WC response to flow

- EBQ#4 Does flow influence WC decision to stop or fly over the AHR?
- EBQ#5 Does flow influence WC stopover length within the AHR?
- EBQ#6 Why is spring WC use of the AHR greater than fall WC use?

What we know about WC riverine habitat selection...

- Unobstructed channel widths and nearest forest are the best predictors of WC use.
- No relationship between flow and WC roost-site selection



Moving forward on riverine habitat selection

- Continue collecting use site locations
- Two rounds of habitat selection evaluations



Measuring WC Response to Riverine Habitat Management



EBQ #1-3 WC response to channel width

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EBQ #4-6 WC response to flow

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Looking Back EBQ #4 Does flow influence WC decision to stop or fly over the AHR?

Stop over decision model

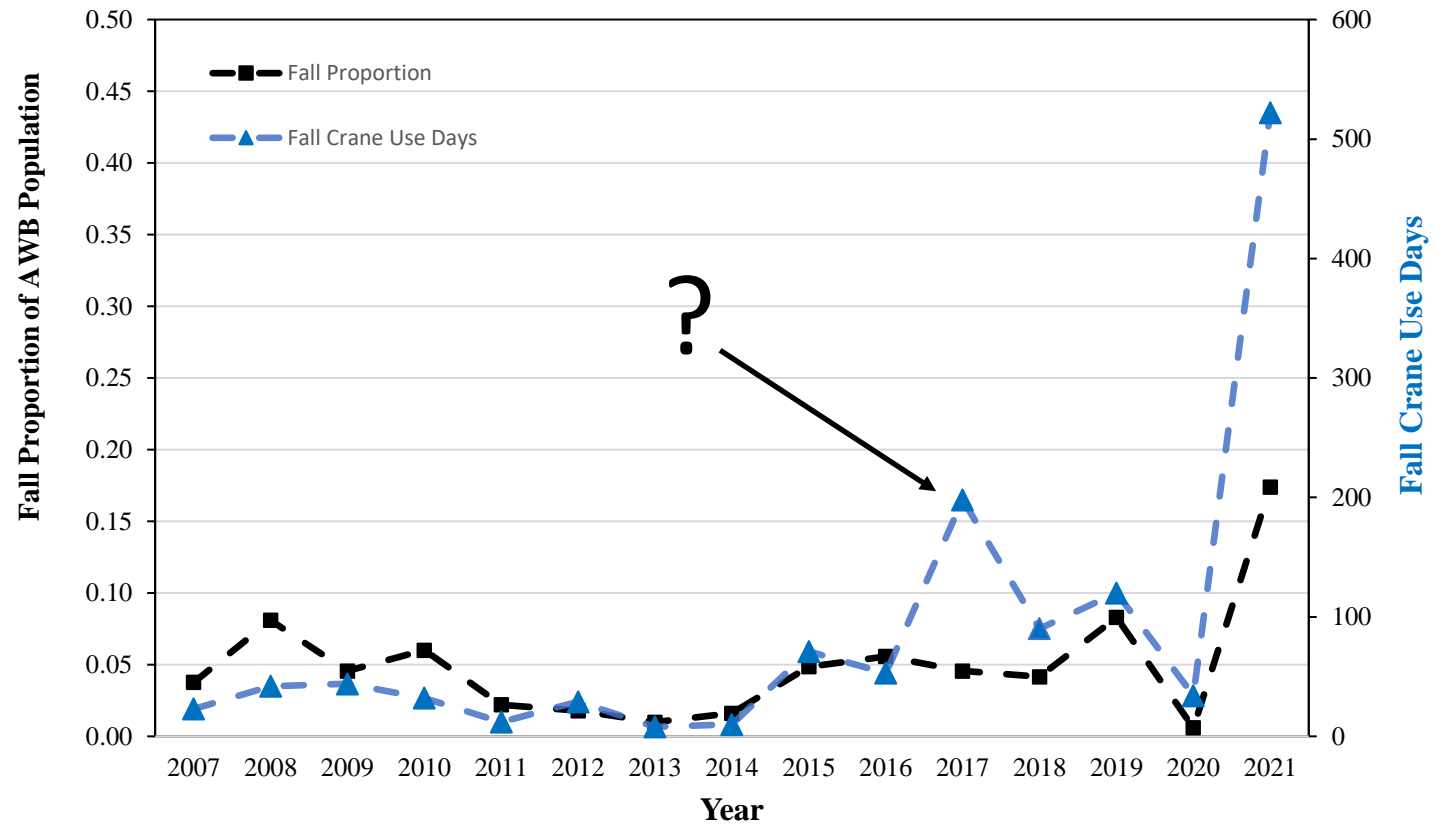
Model Rank	Variables	AICc	Δ AICc	weight
1	Time of Day * MUOCW	31.3	0	0.199
2	Time of Day	31.8	0.5	0.157
3	Time of Day * MUOCW + Flow	33.5	2.2	0.066
4	Time of Day + Flow	33.9	2.6	0.054
5	MUOCW	56.8	25.5	0
6	Flow	59.3	28	0

Moving Forward EBOQ #4 Does flow influence WC decision to stop or fly over the AHR?

- Two-tiered analysis
 - What variables are the best predictors during prime stopover time?
- Request telemetry data further away from AHR to evaluate other variables
 - i.e. distance from last stopover

Looking Back EBQ#5 Does flow influence WC stopover length within the AHR?

- Crane-use days can indicate places to start looking
- Observed longer stay-lengths of Juveniles in spring.

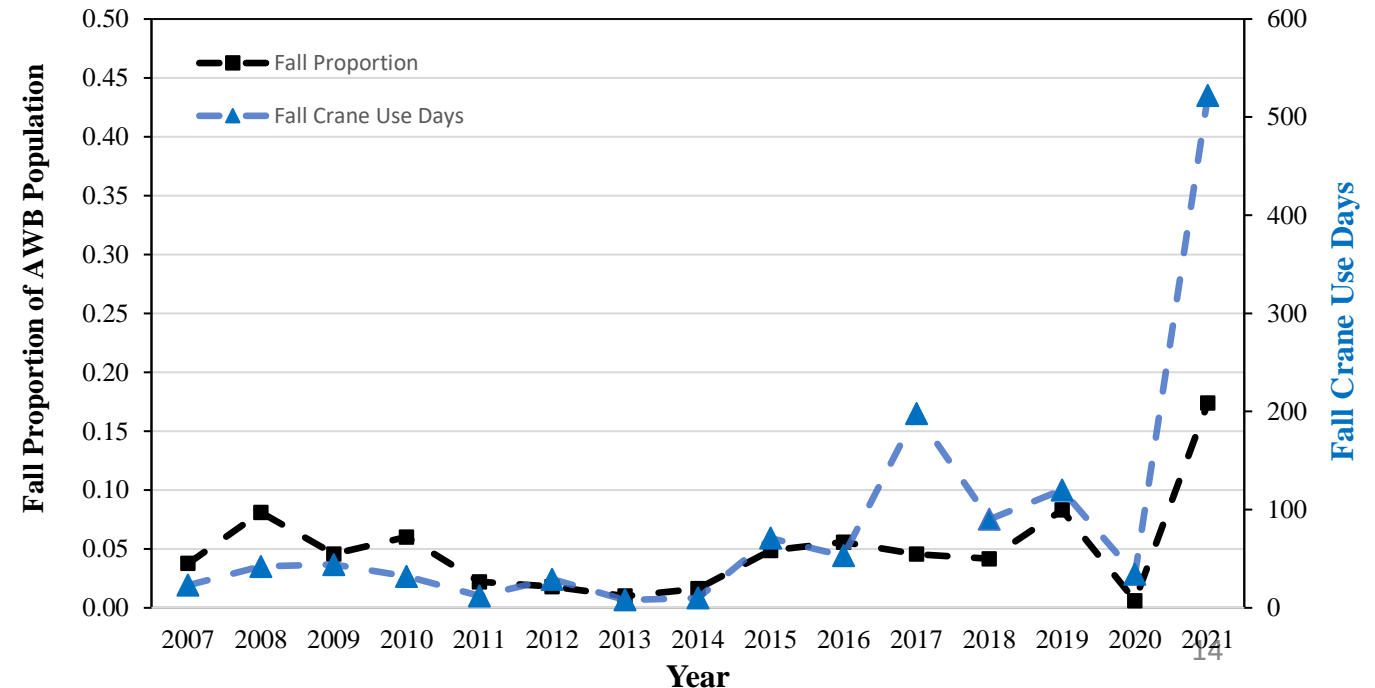
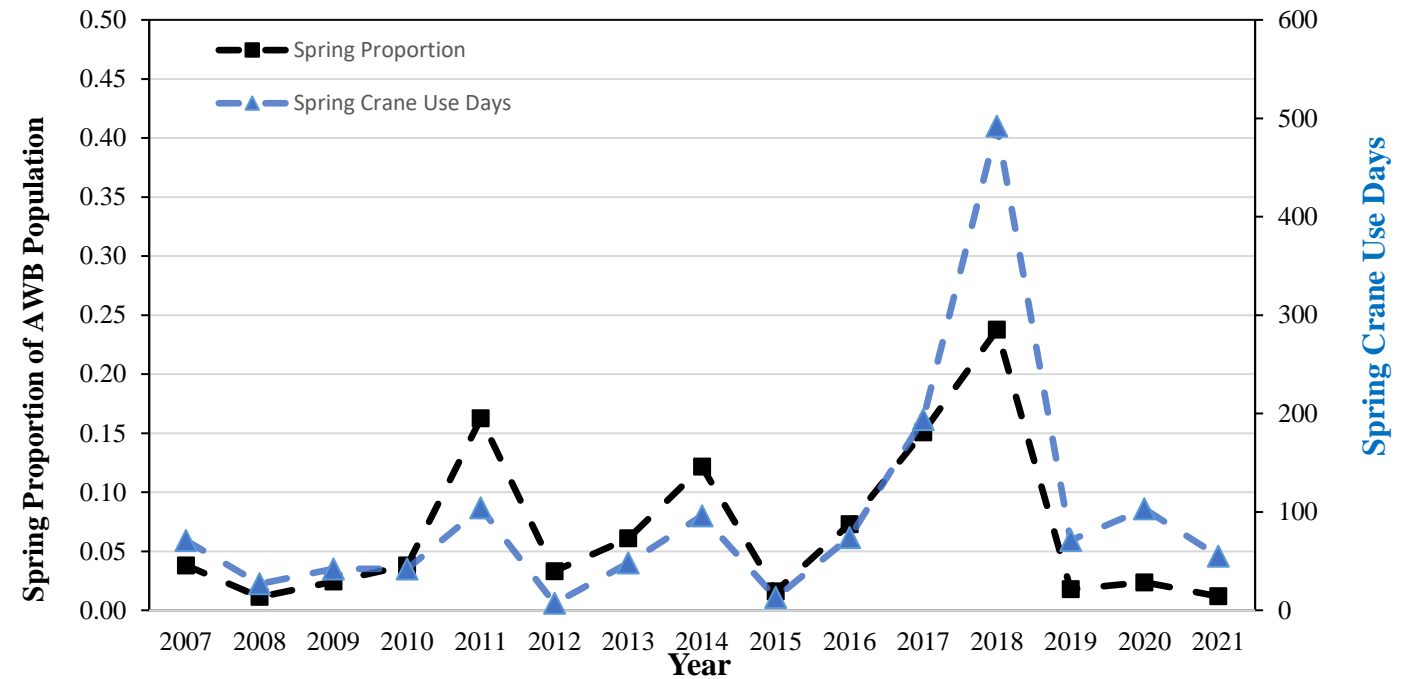


Moving Forward EBO#5 Does flow influence WC stopover length within the AHR?

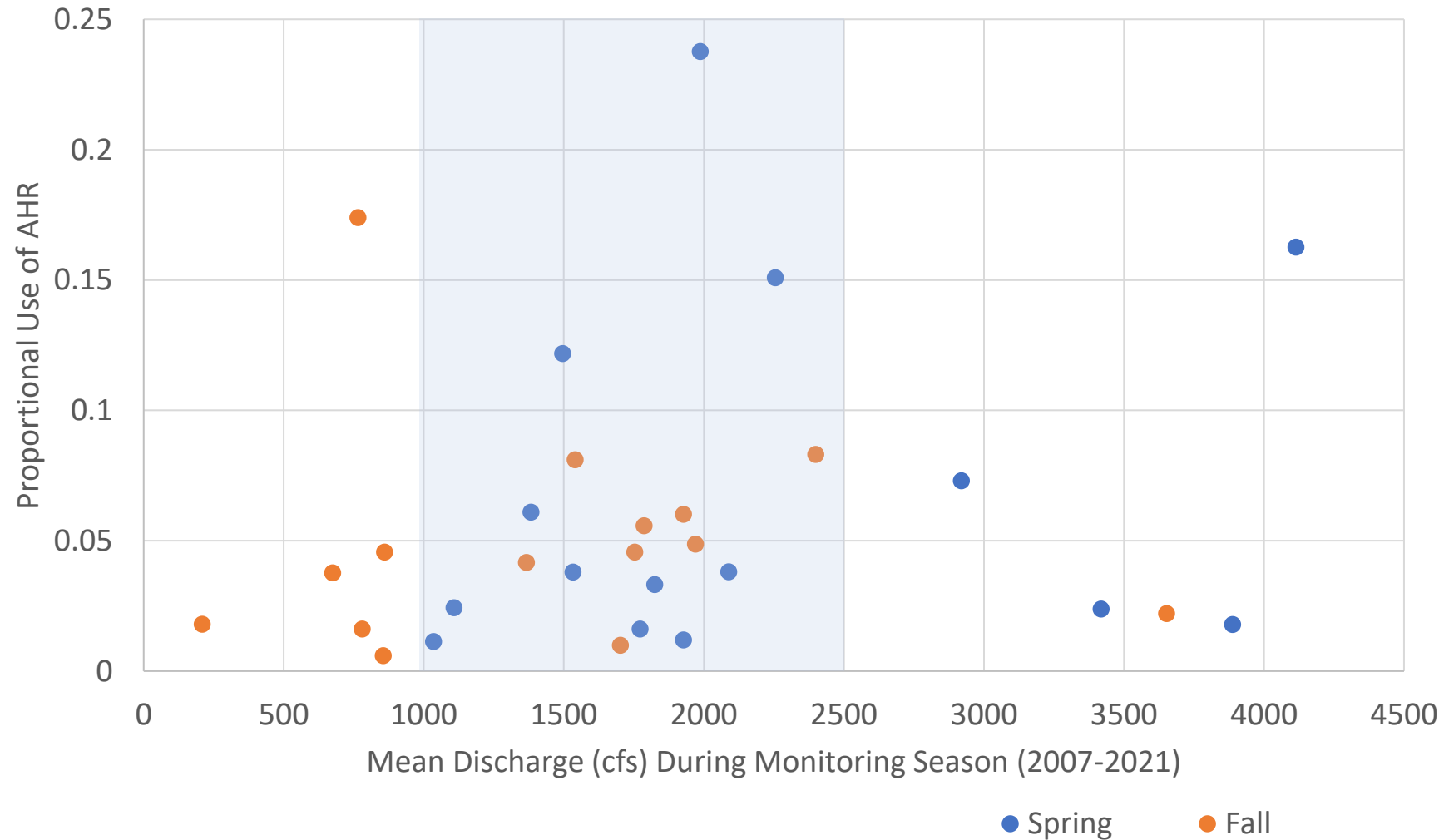
- Flow metrics at WC use sites
 - wetted width
 - percent of channel that's a suitable depth (≤ 1 foot)
- Crane Groups vs. Crane-Use Days
- Several other possible variables
 - stay-length at their previous stop-over
 - distance traveled from the previous stop-over
 - season
 - group composition
 - atmospheric conditions

Looking Back EBQ #6

Why is spring WC use of the AHR greater than fall WC use?



Are the differences in flow and proportion of use related?



Moving Forward EBQ #6 Why is spring WC use of the AHR greater than fall WC use?

- Are higher proportions of use in the spring a function of discharge?
 - WC use sites to measure:
 - wetted width
 - percent of channel that's a suitable depth
- Many other factors
 - Staging, distance traveled, previous stop-over length, MUOCW differences, time of day encountering, group size/composition, reproductive cycles, trajectory, and weather.

Discussion

- What would you like to see in terms of data on atmospheric conditions to help explain how weather affects choices for stopover and stay length?
- Atmospheric conditions at what locations are most important?