

## 2021 Nest Box Study

Brad Andres. October 1, 2021 :

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### Low Productivity for Bluebirds and Swallows in 2021

We continued our regular monitoring of nest boxes at Elk Meadow and Alderfer/Three Sisters Jefferson County Open Space Parks in 2021 — 32 boxes in Elk Meadow and 18 boxes in Alderfer/Three Sisters. We made eight visits to each park between the end of April and mid-August to check the progress of boxes, spending a total of 23 survey hours at Elk Meadow and 13.7 hours at Alderfer/Three Sisters. We appreciate the assistance of Lisa Bloch; Majorie Clinton; Linda Bollinger; Karl Ellefsen; Andrea & Ed Furlong; Melissa Leasia; Tim Leake; Brooks, Matie, Trevor & Winnie Darin; Declan, Hazel, Leah & Tobin Roach. Thanks to Jefferson County Open Space for their continued partnership with the nest box monitoring.

In general, egg-laying and productivity were down significantly at both sites. Fewer nests had eggs laid by Mountain Bluebirds (-33%) and Western Bluebirds (-60%) than the average year between 2009 and 2020 in Elk Meadow, although the number of nests with eggs laid by Tree Swallows was up slightly (29%; Table 1). For the first time since 2011, no Western Bluebirds built nests and laid eggs at Alderfer/Three Sisters, and the number of Mountain Bluebird nests with eggs was down 57%. The number of Tree Swallow nests with eggs was down by 78%. At both sites, four nest boxes were occupied by House Wrens, three by Mountain Chickadees and one by a Pygmy Nuthatch. Unfortunately, we lost five nest boxes with eggs or chicks in Elk Meadow, likely due to large mammals. This loss combined with a rainy spring may have led to the low rates of occupancy and egg-laying. The total number of young bluebirds and Tree Swallows produced in nest boxes in 2021 (79 chicks) was the lowest since 2011. The role the early snow last fall played in these decreases is unknown.

We hope bluebird and swallow populations in Elk Meadow and Alderfer/Three Sisters will recover next year. We plan to assess the effects of weather on occupancy and productivity in the future. If you would like to participate in nest-box monitoring efforts in 2022, please contact Rachel Hutchison ([treasurer@evergreenaudubon.org](mailto:treasurer@evergreenaudubon.org)).

Brad Andres and Rachel Hutchison

	Bluebirds		Tree Swallow	Mountain Chickadee	Pygmy Nuthatch	House Wren
	Mountain	Western				
<b>Elk Meadow</b>						
Nests with eggs in 2021	10	3	13	1	1	2
Average nests with eggs	14.8	7.6	10.1			
Successful nests in 2021	8	3	9	1	1	1
Clutch size in 2021	5.0	5.0	5.0	6.0	6.0	6.0
% hatched of eggs laid in 2021	68.0	80.0	68.3	83.3	83.3	50.0
Average % hatched of eggs laid	77.2	88.2	78.3			
% fledged of eggs laid in 2021	58.0	66.7	41.7	83.3	83.3	50.0
Chicks fledged/pair in 2021	2.90	3.33	2.08	5.00	5.00	3.00
Average chicks fledged/pair	3.34	3.82	3.19			
Young produced in 2021	29	10	25	5	5	6
Average young produced	56	46	36			
<b>Aldefer/Three Sisters</b>						
Nests with eggs in 2021	2	0	1	2	0	2
Average nests with eggs	4.7	5.7	4.6			
Successful nests in 2021	2		1	2		2
Clutch size in 2021	5.5		4.0	6.0		5.0
% hatched of eggs laid in 202	100		100	100		100
Average % hatched of eggs laid	67.4	80.3	84.3			
% fledged of eggs laid in 2021	100		100	91.7		100
Chicks fledged/pair in 2021	5.50		4.00	5.50		4.00
Average chicks fledged/pair	3.39	3.34	3.14			
Young produced in 2021	11	0	4	11		4
Average young produced	21	21	15			

Table 1. Breeding success of birds using nest boxes in 2021 and average success in Elk Meadow (2009-2020) and Alderfer/Three Sisters (2011-2020) Open Space Parks, Evergreen, Colorado. Some nest boxes where eggs were laid v destroyed before outcomes could be determined.