SERPPAS RED-COCKADED WOODPECKER TRANSLOCATION PROJECT
2017 ANNUAL REPORT
January 2018

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Introduction and Project History

Translocations have been part of the recovery effort for the federally endangered red-cockaded woodpecker (RCW) since the late 1980s (Costa and Kennedy 1994, Hess and Costa 1995). This management technique involves moving RCWs (subadult birds) to new locations within existing populations to boost population growth rates as well as to establish new populations within their historic range. Inter-population translocations (hereafter "translocations") are conducted between donor populations and recipient populations using criteria presented in the Red-cockaded Woodpecker (*Picoides borealis*) Recovery Plan: *Second Revision* (hereafter "Recovery Plan") (U.S. Fish and Wildlife Service 2003). Requirements for qualifying as donor or recipient population are described in the Recovery Plan.

The importance of translocations in saving small, fragmented, and at-risk populations from extirpation has been clearly demonstrated (Rudolph *et al.* 1992, Haig *et al.* 1993, Brown and Simpkins 2004, Hedman *et al.* 2004, Morris and Werner 2004, Stober and Jack 2004) as well as its effectiveness in reintroducing RCWs into new habitats within its historic range (Hagan and Costa 2001, Hagan *et al.* 2004). While the demand for birds has somewhat stabilized, the "extra" birds available have allowed some populations to receive birds in consecutive years and in numbers greater than the standard 3 pairs. Both of these situations are known to positively affect the success of translocations (Saenz *et al.* 2002, Costa and DeLotelle 2006). Additionally, "extra" birds have also permitted the SRTC to once again establish new populations, e.g., the new subpopulations on both the St. Marks National Wildlife Refuge in 2015 (Florida) and Savannah River Site in 2017 (South Carolina).

In 1998, the Southern Range Translocation Cooperative (SRTC) was created to coordinate the distribution of the limited number of RCWs available for translocation in the southeastern portion of the species range (Costa and DeLotelle 2006). An annual SRTC meeting in Tallahassee, Florida allocates available RCWs in a modified version of the alternating-year model described by Saenz *et al.* (2002).

Beginning in 2008, new translocation biologist (hereafter, biologist) positions established through a partnership with state and federal agencies were stationed at large, stable and growing populations to work toward the shared goal of speeding up recovery efforts at recipient properties by providing additional RCWs (+/- 10 pair/biologist annually) to the SRTC (see **Appendix 1**) and ultimately bringing the RCW closer to delisting. The 2008 translocation partnership was formed with the Department of Defense (DoD), U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), Clemson University (CU), University of Georgia Athens (UGA), and the state wildlife agencies in Florida, Georgia and Alabama. With funding from the Southeast Regional Partnership for Planning and Sustainability (SERPPAS), these biologist positions were established in South Carolina and Florida. The new SRTC donor sites were the Osceola National Forest (ONF) in Baker

and Columbia Counties, Florida and the Francis Marion National Forest (FMNF) in Charleston and Berkeley Counties, South Carolina. In 2010, with funding from the U.S. Army, the partnership added a third SERPPAS donor population - Eglin Air Force Base (EAFB) in Okaloosa, Walton, and Santa Rosa Counties, Florida. See **Appendix 1** for a detailed list of the annual (2008-2017) donors, recipients and funding sources.

The biologists funded as a part of the SERPPAS/U.S. Army translocation project supplied approximately one-third of all the RCWs contributed to the SRTC from 2008-2011 when the biologist located on the FMNF was no longer funded through SERPPAS (see **Table 1)**. However RCWs continued to be successfully translocated from the ONF and EAFB from 2012 to present contributing approximately 40 subadult RCWs to the SRTC each year. Starting in 2014, the ONF biologist was no longer funded through SERPPAS; the funding for the ONF project was taken over by the U.S. Forest Service. However, in order to maintain a thorough record of the ONF translocation program, including the demographics of the RCW population, ONF results are still included in this report.

Table 1. Number of RCWs donated to SRTC annually by donor population.

Donor Population	Number of RCWs											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total SERPPAS Contribution	Total Birds Contributed
FMNF, SC	20	29	20	-	-	-	-	-	-	-	69	**69**
ONF, FL	20	16	24	20	20	18	14	20	21	20	118	**193**
EAFB, FL	-	-	19	20	20	18	24	21	20	23	165	**165**
Other SRTC donors	96	94	102	84	90	66	74	96	79	82	-	**863**
Total	**136**	**139**	**165**	**124**	**130**	**102**	**108**	**137**	**120**	**125**	**352**	**1286**
% SERPPAS Contribution	29%	32%	27%	32%	31%	35%	*22%	*15%	*17%	*18%	-	27%

* ONF operating with non-SERPPAS funds.

Since the SRTC was founded, 33 private, state and federal ownerships have served as recipient sites for translocated RCWs. The 33 ownerships harbored 26 populations and 18 subpopulations for a total of 44 potential RCW recipient “locations”. Subpopulations are aggregates of RCW groups on a property that are separated by more than 3.7 miles from one another and, therefore, qualify to receive RCWs. After 20 years (1998-2017), a significant number of these 44 locations have achieved 30 potential breeding groups (PBGs) or their stated population goal (if <30 PBGs) and are now "off-line"; i.e., no longer a SRTC recipient. As of 2017, 15 (58%) of the 26 populations and 15 (83%) of the 18 subpopulations are off-line, respectively. Lauerman *et al.* (2013) have illustrated how critical the SERPPAS contributions were to these accomplishments.

The additional birds went a long way toward alleviating the supply shortage and even created the opportunity for new populations in the SRTC to receive birds. The influx of donor birds also allowed recipient properties that were not slated to receive birds in a particular year to be allocated pairs while still remaining on the proposed list of recipients for the following year. Those recipient populations who are able to receive birds during “off” years especially benefited from the new donors because the accelerated rate of augmentation brought them to 30 PBGs (and off the recipient list) ahead of schedule. In several cases, “off-line” populations have become donors themselves.

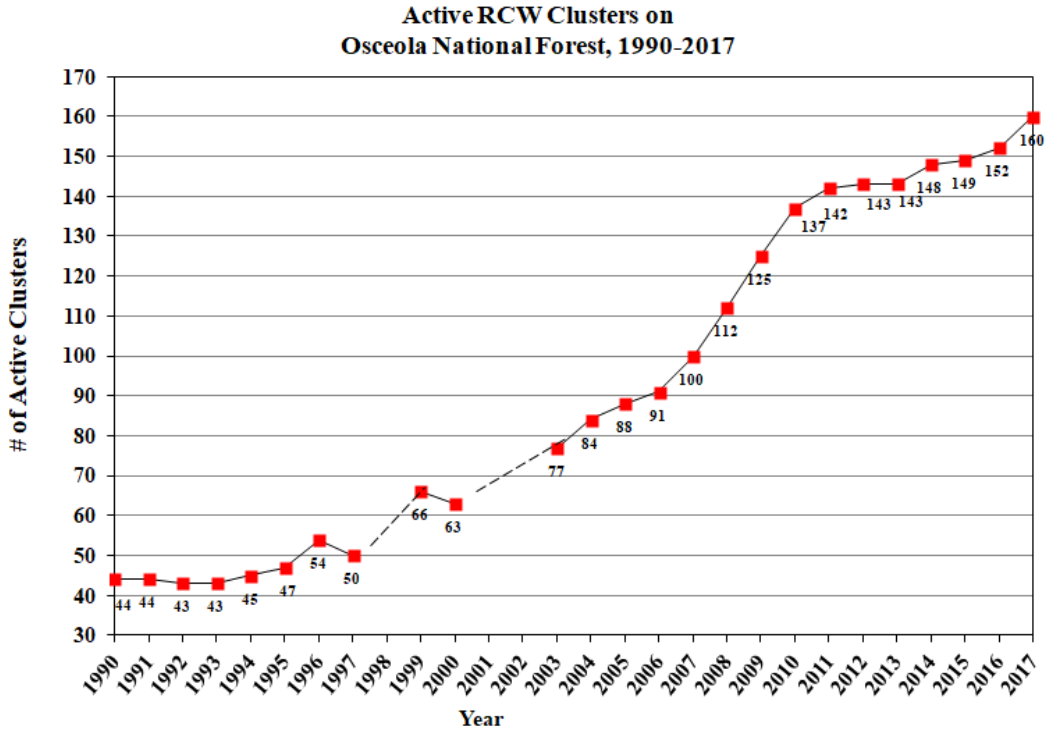
The SERPPAS RCW translocation project has now concluded its tenth year. This annual report presents the data from the 2017 breeding and translocation seasons by donor site, as well as summarized results of all previous years of translocations (2008-2016).

2017 Donor Sites

Osceola National Forest

The ONF is located in the South Atlantic Coastal Plain Recovery Unit (N30 20', W82 25'), 10 miles east of Lake City, Florida. This 95,641 ha (236,334 ac) property is managed by the USFS, with 37,393 ha (92,400 ac) currently under RCW management. From 2005 to 2017, the population (in active clusters) has grown at an average annual rate of 7% (see **Figure 1**). In 2017, the ONF had 160 active clusters (although 5 of these may be captured clusters), representing 5% growth from last year. PBGs grew 6% to 149. The ONF has a projected carrying capacity of 462 active clusters and will be considered recovered when the Osceola/Okefenokee Primary Core Recovery population reaches 350 PBGs (USFWS 2003). For more discussion on the growth, history and forest management strategies in use on the ONF, see the 2008, 2009 and 2010 SERPPAS annual project reports (Lauerman *et al.* 2009, Lauerman *et al.* 2010, Witter *et al.* 2011).

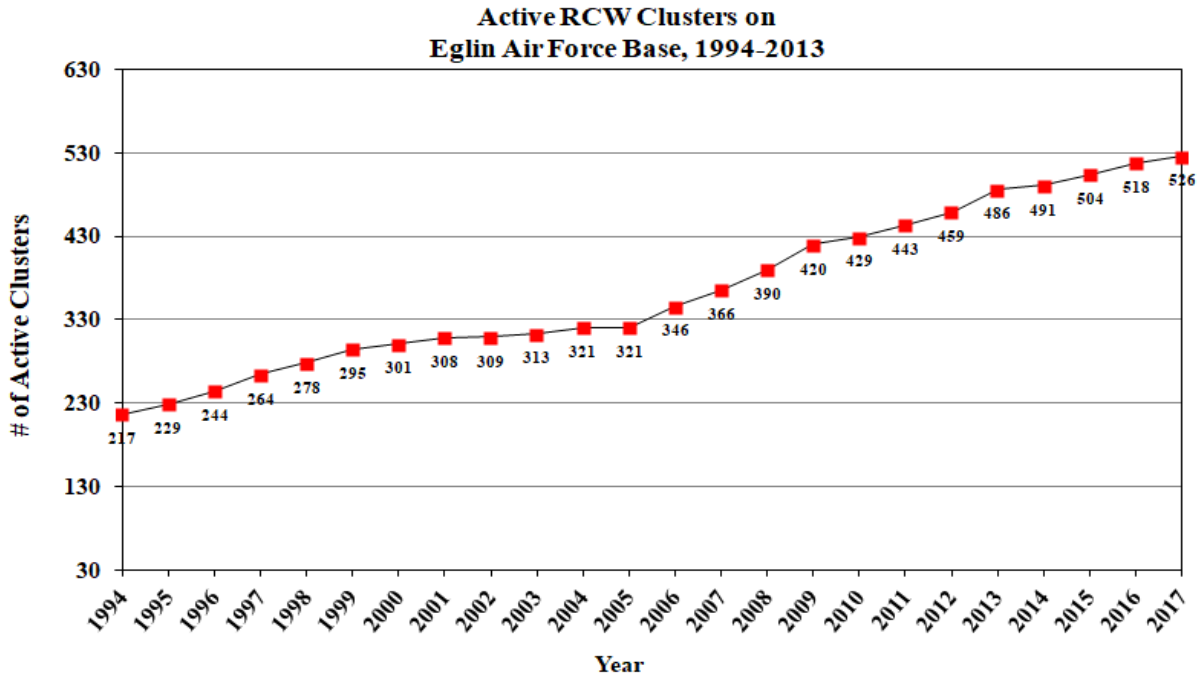
Figure 1: Population trend (number of active red-cockaded woodpecker clusters) on the Osceola National Forest from 1995-2017.



Eglin AFB

EAFB is an 187,515 ha (465,000ac) installation located in the East Gulf Coastal Plain Recovery Unit. Management of the forest is conducted by Eglin's Natural Resources Branch (also known as Jackson Guard) and they currently have 84,984 ha (210,000 acres) under RCW management. The RCW population is split into eastern and western sub-populations by two major highways with the higher concentration of clusters located on the western side of the installation. EAFB is a primary core recovery population (USFWS 2003) and, in 2008, reached its established recovery goal of 350 PBGs. This population has experienced steady growth since 1995; the number of active clusters has more than doubled in the intervening years (see **Figure 2**). The EAFB population reached 526 active clusters in 2017, increasing in size by 2.5% from the previous year. All clusters are monitored for activity on an annual basis. One-fourth of all active clusters are monitored for group size annually by EAFB's Natural Resources Branch personnel. Approximately 120 active clusters are intensively monitored (i.e., nestlings are banded) to support the SERPPAS translocations. The nestlings of an additional 40 clusters are banded for a long-term intensive monitoring project and internal translocations carried out by Virginia Tech University. For more discussion on the growth, history and forest management strategies in use on EAFB, see the 2010 SERPPAS annual project report (Witter *et al.* 2011). In 2016, EAFB successfully surpassed their long-term installation goal of 450 PBGs, which will allow for more mission flexibility. This year, EAFB also surpassed their goal of 100 PBGs within the eastern subpopulation. Reaching these milestones may impact the monitoring intensity at some point in the future, as of right now 2018 monitoring is expected to be carried out the same as previous year's, military training activities permitting.

Figure 2: Population trend (number of active red-cockaded woodpecker clusters) on Eglin Air Force Base from 1994-2017.



Project Objectives
The duties of the biologists are to monitor and identify surplus RCWs for the translocation effort. Specifically, at each donor population the following are conducted:

a) Monitor 100+ RCW groups during the nesting season
b) Band all nestlings from the 100+ groups
c) Conduct roost cavity checks for all eligible subadults fledgling from 100+ groups
d) Trap and translocate 20 subadult RCWs from the pool of 100+ groups monitored

METHODOLOGY:

Monitoring of RCW nesting, banding of individuals and translocations follow the standard methodologies outlined in the Recovery Plan. Since 2008, each biologist has addressed numerous challenges, adapted new solutions, and recognized many opportunities for success at their respective host populations. For population specific methodology and an in-depth discussion on individual population challenges and experiences, see the 2008 to 2016 SERPASS annual project reports (Lauerman *et al.* 2009, Lauerman *et al.* 2010, Witter *et al.* 2011, Witter *et al.* 2012, Lauerman *et al.* 2013, Witter *et al.* 2014, Witter *et al.* 2015, Witter *et al.* 2016, Witter *et al.* 2017).

2017 Breeding Season and Translocation Results

Osceola National Forest

In the 2017 breeding season, all 204 clusters on the ONF were surveyed by the contract biologist or USFS to determine activity. Of the clusters surveyed, a subset of 115 was selected by the contract biologist for breeding season monitoring; USFS personnel monitored the remaining groups in the population. Collaboration between USFS and the contract biologist provided opportunities to interchange clusters as the breeding season progressed, allowing successfully nesting groups to be exchanged for unsuccessful groups. This resulted in a net increase to 123 clusters monitored by the contract biologist; all clusters contained PBGs.

Of the 123 PBGs monitored in 2017, 120 produced a nest. Of the nesting groups, 108 (90%) reared chicks to banding age and 203 nestlings out of 206 were banded. Eleven groups experienced nest failure between banding and the pre-fledge check. Approximately 170 chicks survived to the pre-fledge check; 51% were males (*n*=87), 45% were females (*n*=77) and 4% were of unknown sex (*n*=6).

A total of 145 fledglings from 91 groups were observed during post-fledge checks. Monitored groups which successfully nested (nestlings present at pre-fledge check) produced 1.6 nestlings/nest this year; the 2008-2017 average is 1.8 nestlings/nest. Fledge success was 1.4 fledglings/successful nest, or more conservatively, 1.2 fledglings/nests and these rates were at or below the ten-year average of 1.4 and 1.3. The ONF population had a mean group size of 2.3 adult RCWs per active cluster (2.5 adults/active cluster in contract biologist's subset).

During the 2017 translocation season, 20 subadults were removed from the ONF, representing 12% of the population's annual recruitment (based on pre-fledge check data). Birds were captured during two events. In the first capture night on October 19th, 5 pairs were moved to Bull Creek/Triple N Ranch (Osceola County, FL). Birds were placed in inserts at the recipient site the night of capture and released on the morning after their capture. The second move was 5 pairs to J. W. Corbett Wildlife Management Area (Palm Beach County and Martin Counties, Florida) on the evening of November 8th; recipient biologists transported and hand-fed birds during the daytime of November

9th and placed them in cavities that evening. Birds were released on the morning of November 10th. Recipient biologists reported successful releases of all birds. This year marks the tenth year for the ONF project. From 2008 to 2017, a total of 193 birds (118 SERPPAS funded) have been translocated from 98 of the donor clusters.

Eglin Air Force Base

Prior to the 2017 breeding season, 153 clusters were inventoried looking for evidence of RCW activity and the presence of a PBG. Due to many factors including a new subcontractor (began March 1) and the Black Dart training mission scheduled for May 2017, whose projected foot print caused a major shift in potential SRTC monitored clusters, inventory and final selection of 2017 monitored clusters ran into the first two weeks of the nesting season. Major selection factors beyond presence of a PBG were potential access issues due to Black Dart, number of cavities available for fledglings, and assumed group size. Eventually 125 clusters were selected for SRTC monitoring. Throughout the breeding season 13 of the 125 monitored clusters were determined to be captured by a neighboring group(s). During nest monitoring one new group, via "budding" (one territory splits into two), was confirmed. Nine groups were dropped from monitoring for multiple reasons; reduced tree activity, flying squirrel usurpation, determined single bird, limited access due to training, and one cluster went inactive. One new pioneer group was found by the biologist post nesting. In all, 104 PBGs were monitored for nesting from 1 April to 31 July. Average group size was determined to be 2.6 adults/monitored cluster where this information was confirmed. Of the 104 monitored clusters 95 PBGs produced one or more nests. The nest failure rate was 21% (n=21) of all nest attempts (n=101); the later nests were impacted by tropical storm Cindy resulting in all groups with nestlings and two groups with eggs failing.

Seven nests were not banded this season. Two were the direct result of mission impacts preventing timely access, the other five were missed due to other factors. Overall, 76 groups produced chicks that were located within the banding age of 7-10 days old. One group was banded twice over three nest attempts where the 2nd and 3rd attempts were banded. A total of 157 chicks were banded from 77 nests with an average nest size of 2.1 chicks/nest banded. Second nest attempt searches were not conducted.

Pre-fledge checks were conducted when nestlings were 19-21 days old. Of the 77 banded nests 49 checks were successfully completed to confirm presence and potential gender(s) of nestlings. Two of the 49 groups checked were determined to have suffered complete brood loss post banding though a number of nests are believed to have experienced partial brood reduction during the post banding-fledging window: absolute confirmation is difficult due to the potential for nestlings to be hidden from view by other nestlings, but the premise is supported by low fledgling re-sight numbers. In order to confirm survival and determine sex of juveniles, at least one fledge check was conducted on all 75 successfully (confirmed or assumed) fledged nests; 16 groups received two or more fledge checks to confirm fledgling genders and group size. Pre- and post- fledge checks yielded a total of 44 males, and 52 females; only 96 of the 157 banded nestlings were re-sighted as fledglings. This year's overall fledgling success rate of 1.6 chicks fledged per banded group was similar to past success rates though those rates were calculated off of a specially selected subset of banded nests while the 2017 success rate was calculated off of all banded nests.

The translocation of six pairs to the Talladega Ranger District of the Talladega National Forest in Alabama took place on Wednesday Oct 4th. A second translocation of four pairs to the Shoal Creek Ranger District of the Talladega National Forest took place on Oct 12th. All birds were placed in inserts at the recipient sites the night of capture and released on the morning after their capture. A third translocation to boost EAFB eastern sub-population was conducted. The capture of three juvenile RCWs was divided up into one morning and one evening capture due to EAFB policy of capturing at least half of all intrapopulation translocated birds in the morning and conducting a soft release into their new cluster shortly after sunrise. Recipient biologists reported successful releases of all birds.

Discussion

Translocation Success 2008-2016

The criterion for success used by the SRTC is the presence of the translocated bird on the recipient property, through the first breeding season after its release, as a breeder or potential breeder, solitary male, helper, or floater (McDearman 2011). Success rates typically range from 50-60% (Costa and Kennedy 1994, USFWS 2003, McDearman 2011). Although it is important to review SERPPAS RCW translocation success, it is necessary to keep in mind the success rates may not fully reflect actual bird retention since not all monitoring efforts at recipient properties are equal. If a bird is not observed during the breeding season following the translocation, it is still possible the bird remains on the property. In addition, success numbers provided here do not include translocated birds that have moved to adjacent properties. Furthermore, not all recipient properties have the resources to conduct full scale population inventories annually so it is possible that retention rates are underestimated for some. This is the case for past translocation results from the Conecuh NF. As a result of the lack of complete information available for these translocations, 34 individuals are not included in the success rate calculations in this report. Additionally, in 2015 the Desoto NF RCW wildlife biologist was on a detail during the period when translocation success is determined and therefore was not able to collect all necessary information to determine success. However, their data were included in the overall, SRTC–wide success rates for 2015 and resulted in the lower than normal percent success recorded (44%, see below). Overall, results of SERPPAS translocations are helpful in gauging the success of the project but should be considered conservative estimates**.**

The nine years (2008-2016) of data collected from the recipients of the SERPPAS donor populations yielded an overall success rate of 52% (*n*=152 of 295 birds; note, these numbers do not include Conecuh's data or ONF data from 2014 onward, which were non-SERPPAS years. (see **Table 2** and **Appendix 1**). This rate is comparable to the overall success rate (50%) for all SRTC recipient populations over the course of this project (2008 – 54%; 2009 – 51%; 2010 – 46%; 2011 –51%; 2012 – 48%; 2013 – 52%, 2014 – 50%, 2015 – 44%) (W. McDearman, pers. comm.: SRTC retention spreadsheets 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016).

Table 2. SERPPAS Translocation Success 2008-2016

Annual Retention of Translocated Birds

Donor	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average Success	SERPPAS Average Success
ONF	5 of 20 (25%)	7 of 12* (58%)	13 of 16* (81%)	7 of 20 (35%)	13 of 20 (65%)	9 of 18 (50%)	5 of 14$^{\delta}$ (36%)	12 of 20$^{\delta}$ (60%)	15 of 21$^{\delta}$ (71%)	53%	52%
EAFB	-	-	10 of 15* (67%)	11 of 20 (55%)	7 of 14* (50%)	7 of 12* (58%)	12 of 24 (50%)	6 of 15* (47%)	9 of 20 (45%)	53%	53%
FMNF	12 of 20 (60%)	13 of 29 (45%)	11 of 20 (55%)	-	-	-	-	-	-	52%	52%
Average	43%	49%	67%	45%	59%	53%	45%	54%	56%	53%	**52%**

* Data were unavailable for individuals donated to Conecuh National Forest due to inadequate resources to conduct full population monnitoring: therfore, this table does not reflect those individuals.

$^{\delta}$ Excluded from SERPPAS Average Success %

Overcoming Project Challenges

In past annual SERPPAS reports, we have noted some of the challenges experienced by the biologists in the normal course of breeding season monitoring, such as weather events, military activities on EAFB, population demographics and cluster accessibility. These obstacles can impact the annual donation goal from each donor. Some difficulties encountered may simply lead to a challenging monitoring season but not impact the overall reproduction of the population. However, other challenges impact reproduction, which may necessitate a reduction in the number of birds available for translocation. In addition, unexpected difficulties can occur during the translocation capture events themselves. Adjustments to the annual project goals provide important flexibility and should be seen as a normal part of working in a natural environment where many variables can impact the project. Despite these challenges and annual variability, the total contribution of the biologists has exceeded expectations. Since 2008, 352 birds have been translocated; the overall goal was 340.

Osceola National Forest

One of the challenges inherent in a project like this is the unpredictability of weather and this year, precipitation patterns had a noticeable impact on RCW chick survival at the ONF. The breeding season started in drought conditions. Unlike typical years where early-nesting groups produce larger brood sizes and show better reproductive success than groups nesting later in the season, this year, we saw record brood reduction and record nest failures occurring between banding and the pre-fledge check from the onset. Although dry conditions can be good for RCW reproduction, the extent of this dry period was clearly unfavorable for chick survival, likely due to a reduction in food sources, thus difficulty in provisioning chicks. The drought ended in June and birds renested or double-brooded in response. However, rainfall in June was several inches above average and nests were loss due to flooding (two of them in chick stage). Overall weather patterns of too little, followed by too much precipitation were the likely culprits for the poor survival of nestlings as seen by the drop in number of chicks/nest from one-week old to three-weeks old (a decrease of 0.3 chicks/nest; the ten-year average is only a loss of 0.1). Weather issues continued during the translocation season in the form of Hurricane Irma. On September 10th and 11th, Hurricane Irma hit the ONF in a weakened state but still packed tropical storm-force winds and brought with it over 12” of rain in a two day period.

Survival of adult and juvenile birds during such events is always a concern, young of the year being the most vulnerable and most likely to be without a suitable cavity to protect them. Fuel shortages and access to clusters prevented initial surveys of the damage. However, roosting was able to resume one week after the storm passed. Very little wind damage was seen in the clusters, so the biggest impact to RCWs was likely the two days of rain. With a focus on groups with eligible subadult males (the more limited pool of candidate birds for translocation) roosting data showed high survival rates; birds must have been able to seek shelter and reduce their exposure. Unfortunately, the results were much different when focus shifted to finding candidate females. Roosting success rate plummeted to around 20%. Every possible candidate group was surveyed and/or roosted to find females. This was the first time in ten years when all options for females had to be explored in order to reach the target goal. Although it is interesting to note 2017 was the first year the sex ratio was skewed towards males, there were still 69 females to choose from (for comparison, in 2012 and 2013 there were only 67 females with no issues securing candidate birds). Hurricane Irma likely exacerbated the low number of females available for translocation. Certainly exposure to the elements would have increased mortality. Females could have been out-competed by members in their own group or other cavity competitors as demand for shelter increased around the time of the storm. Despite these weather challenges, all 20 birds (10 males/10females) were caught, capture nights ran smoothly and there were three candidate females to spare.

Past years of falling below the translocation target goal has highlighted the need for cavity augmentation to reduce competition and create roost sites in catchable cavities for new fledglings. The benefits seen from insert installations in 2015 and 2016 were clearly demonstrated in the successful years following augmentation. In light of the challenges of locating subadult females this fall, recommendations for 76 more inserts have been submitted to the USFS. The criteria for recommendations were 1) create three suitable cavities in each cluster in addition to the cavities currently occupied by the adults and known subadults, 2) add inserts in clusters with history of subadults out-roosting/extraterritorial roosting, regardless of number of cavities, and 3) add inserts to clusters with history of good reproduction but difficult-to-capture-from cavities. In addition, cavity management recommendations (inspection and cleaning of existing cavities) were also submitted to the USFS to be used along with cavity installations. Although we are not likely to experience the same challenges every year, alleviating any cavity limitations will certainly help to mitigate stochastic events like ones experienced in 2017 and support the success of this project and the growth of the population.

Eglin Air Force Base

There were many challenges facing the biologist on EAFB this year. The most pressing and time consuming of these challenges was the transition of the SERPPAS biologist. Kristina Witter ended her tenure on EAFB at the end of February and Aliza Sager began as the new SERPPAS biologist 1 March 2017. This transition so close to the start of the breeding season provided a very narrow time frame for the new biologist to figure out how the project integrates and works alongside EAFBs RCW management practices. Challenges included: (1) how potential military activities impact cluster access and therefore impact cluster selection, (2) coordination with the military for access into closed areas, (3) understanding how the Black Dart mission in May might impact monitoring efforts, (4) putting together data collection protocols and (5) purchasing and inventory all field related equipment.

One of the largest issues in preparation for the breeding season was cluster selection. Due to the new biologist learning the system and the predicted footprint of the Black Dart training mission

that was expected to shutdown a large portion of the western half of the reservation for the majority of May cluster inspection and final selection of monitored clusters was not complete until late April. In response to the anticipated Black Dart footprint a large number of clusters historically monitored for translocation in the center of the western range were dropped and new clusters along the perimeter of the reservation were selected. Although these selections helped to minimize conflicts with Black Dart and increase potential genetic variability within the translocation pool they increased conflicts with other mission activities and dramatically increased the amount of time needed to move between monitored clusters. During the height of the breeding the season the biologist was driving on average 80^{+} miles/day; the time spent in the truck between clusters negatively impacted the frequency of cluster visits resulting in five missed nests. The increased spread in monitored clusters also had an impact on translocations, causing later departures of the recipient populations post capture as a result of long travel times from capture sites.

Spring of 2017 saw a training ramp up across the western range of EAFB. This increase in training activity decreased access windows and severely limited the biologist's ability to monitor certain areas of the installation. These access issues are reflected in the pre-fledge check numbers. Out of 76 banded nests only 49 pre-fledge checks were completed. As always the weather added an additional obstacle; large portions of June and July were very wet resulting in loss of late nests as well as negatively impacting juvenile survival. During translocation preparations cavity availability was identified as a problem due to the wet summer; i.e., there were a large number of cavities experiencing some level of flooding. There were also a couple of very late fledge checks due to flooding that prevented vehicle access into the area until mid/late-September.

Owing to time limitations, the biologist was unable to acquire regular field assistance throughout the breeding and translocation seasons. The biologist was able to complete the requirements of the job alone but is planning on securing some sort of assistance for the 2018 breeding season to hopefully help mitigate any future problems presented by increased military activity across the western range and continued unpredictable weather patterns.

The Black Dart mission that caused large shakeups in monitored clusters and introduced a lot of uncertainty into the outcome of the 2017 season is no longer expected to be conducted on EAFB in 2018. Though Black Dart had negative impacts on cluster selection it ultimately improved access to areas outside of its footprint during the month of May. Because of Black Darts top priority billing all other missions requiring airspace were shut down allowing the biologist to access areas not often available in April. How these changes play out remains to be seen; there are many variables that will impact the outcome of the 2018 season. Given all of the challenges faced in 2017 the project was able to successfully translocate 23 subadult RCWs. This success gives hope that whatever additional issues next year brings they will be manageable.

Projects Future

The availability of funding is the major catalyst driving the success of the translocation projects at each donor site. As of the date of this report, funding has been (or is being) secured to support the biologist on the ONF (through USFS) and on EAFB (through GADNR, ALDCNR, and USFWS) for the upcoming 2018 RCW breeding season. These funding sources are a testament to the strength of

the original partnership SERPPAS created. It is anticipated that both the ONF and EAFB biologists will be able to donate a total of 10+ pair each to the SRTC in 2018.

The Importance of Partnerships

The host donor populations play a key role in this SERPPAS RCW conservation partnership. They provide logistical and financial support in the way of vehicles and fuel, office space, computer support, maps, access to RCW databases, and equipment and supplies as needed. Obviously, the project could not be successfully conducted without the full administrative support of the host populations.

Many partners have collaborated to fund this project over the past eight years (see **Appendix 1**). The significant contributions and commitments of state and federal agencies to this project cannot be overstated. The SRTC's long-term success and survival as an effective multi-state, multi-agency, multi-private partner conservation program is fundamentally grounded in the concept of sharing at the landscape scale across geographic, political and administrative boundaries: sharing people, funding, equipment, time and, most importantly, birds. All participating states and populations are benefiting from this sharing. One state supports a biologist in another state whose birds go to a third and fourth state; and the state supporting the biologist receives its birds from a fifth state! This, now well-established, partnership sharing paradigm is what has made the SRTC the critical and significant RCW recovery program that it is.

Acknowledgments

We would like to thank the SERPPAS partnership for their funding and support. We thank Roel Lopez with DoD/Texas A&M University for establishing the original project and providing years of funding. We thank Joe Burnam with GADNR, and Mark Sasser with ALDCNR for providing funding for the EAFB biologist in 2017. We also thank Don Imm and Will McDearman with USFWS for additional funding for the EAFB biologist. We thank Jeff Gainey and Ed Moody with the USFS for full funding of the ONF biologist in 2017. See **Appendix 1** for funding details for 2008 to 2017.

We would also like to thank the staff at the ONF and at EAFB for hosting the SERPPAS/contract biologists. Specifically we would like to thank Bruce Hagedorn, Justin Johnson and Kathy Gault with the EAFB Jackson Guard as well as Ivan Green (district ranger) and Thomas Scott (wildlife biologist) on the ONF and Jeff Gainey in the regional office for the support and assistance provided to the contract biologist in 2017. As SERPPAS funding is supported through UGA, a special thank you goes to Dr. Joseph Nairn. Additionally, we wish to recognize our wonderful field technicians for their continued support and assistance: Joe Lauerman and Kelli Grigg at the ONF.

Translocations owe their success to the many recipient biologists and their staff and assistants who participated in the translocations:

Bull Creek/Triple N Ranch: *Matt Lerow, Jim Blush, Tina Hannon, Becky Schneider, Greg Thompson, Emily Angell, Paul Miles, Jason Hickson, Jacob Uhle, Amanda Lee, and Jonathan Webb*

J.W. Corbett Wildlife Management Area: *Paul Miles, Valerie Sparling, Pam Boody, Camille Carroll, Carrie Black, Matt Lerow and Jessica Spickler*

Talladega National Forest: *Art Henderson, Jonathan Stober, Chris Rainey, Scott Magargee and William Pentecost*

Conecuh National Forest: *Ronda Mullins, Chance Fillmer, Randy Barefoot, Tracy Simmons, Chantz Birch, and Scott Jordan*

Sarah Lauerman would also like to thank the volunteers, interns and additional biologists involved in the 2017 ONF translocations, including: *Joe Lauerman, Monica Folk, Kelli Grigg, Pat Humphress, Jessica Baker, Aubrey Green, Charlie Pedersen, Norberto Fernandez, Thomas Scott, Joe Greaser, Bryan Huggins and Brandon Davis.*

Aliza Sager would also like to thank *Sharna Tolfree* with CEMML Ft. Polk, *Kathy Gualt* with Jackson Guard, *Lori Blank and Steve Goodman* with Virginia Tech University and *Kristina Witter* of Witter Wildlife Consulting, LLC, their assistance and support during the preparation and transition to EAFB were invaluable. Special thanks to *Tyson Dallas, Carrie Gindl and Brail Stevenson* for their help during the breeding season. And lastly, thank you to all the phenomenal volunteers and additional biologists involved in the 2017 EAFB translocation, including Jackson Guard Staff: *Carrie Gindl, Rodney Felix Jr., Steve Laine, Kathy Gault, Justin Johnson, and Bruce Hagedorn;* Virginia Tech University staff and interns: *Kelly Jones, Brandon Rincon, Vivian Porter, Jen Nierman and Emma Browning;* U.S. Fish and Wildlife Service: *Patty Kelly, Lorraine Ketzler, and Daniel Chapman* and the Longleaf Alliance: *Danielle Deming.*

The project at EAFB would like to acknowledge the investment in time, equipment and fuel provided by the Jackson Guard Natural Resources Office. For the eighth consecutive season, the department provided fuel to support this project. The office also lent, for the eighth year in a row, a wireless tree top peeper for use during field monitoring activities and a set of Swedish climbing ladders.

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Appendix 1: SERPPAS RCW translocation partners (donors and recipient populations and funders) and translocation success 2008-2017[1]

Donor Population	*Funding Source*	*Recipient Population*	*RCWs (# pairs)*	*Retention Rate*[2]
2008 (2 biologists)				
Osceola NF (FL)	*DoD*	Goethe State Forest (FL)	3	0%
		Bull Creek/Triple N Ranch WMA (FL)	2	50%
		Ocala NF (FL)	2	50%
		Babcock Webb WMA (FL)	3	17%
Francis Marion NF (SC)	*DoD*	Military Ocean Terminal Sunny Point (NC)	3	67%
		Ft. Jackson (SC)	4	50%
		Okefenokee NWR (GA)	3	67%
2009 (2 biologists)				
Osceola NF	*FFWCC*[3]	Goethe SF (FL)	3	83%
		Picayune Strand State Forest (FL)	3	33%
		Conecuh NF (AL)	2	XX%[6]
Francis Marion NF	*GADNR*[4]*/ALDCNR*[5]	Ocala NF (FL)	4	50%
		Ichauway (GA)	5	60%
		Talladega RD, Talladega NF (AL)	5 & 1 female	27%
2010 (3 biologists)				
Osceola NF	*U.S. Army*	Disney's Wilderness Preserve (FL)	4	88%
		Conecuh NF (AL)	4	XX%[6]
		St. Marks NWR (FL)	4	75%
Francis Marion NF	*GADNR/ALDCNR*	Ft. Jackson (SC)	6	50%
		Savannah River Site (SC)	2	50%
		Poinsett Electronic Combat Range (SC)	2	25%
Eglin AFB (EAFB) (FL)	*U.S. Army*	Silver Lake WMA (GA)	4 & 3 females	63%
		Conecuh NF (AL)	2	XX%[7]
		Tall Timbers Research Station (FL)	2	75%
2011 (2 biologists)				
Osceola NF	*DoD/FFWCC*	Dupuis WEA (FL)	5	30%
		J.W. Corbett WMA (FL)	5	50%
Eglin AFB	*DoD/FFWCC*	Blackwater River State Forest (FL)	5	80%
		Talladega RD, Talladega NF (AL)	5	30%
2012 (2 biologists)				
Osceola NF	*DoD*	Hal Scott Regional Preserve (FL)	4	75%
		Bull Creek/Triple N Ranch WMA (FL)	3	50%
		St. Sebastian River Buffer Preserve (FL)	3	67%
Eglin AFB	*GADNR/ALDCNR/FFWCC/EAFB*	Conecuh NF (AL)	3	XX%[6]
		Shoal Creek RD, Talladega NF (AL)	4	50%
		Ichauway (GA)	3	50%

Appendix 1 (cont): SERPPAS RCW translocation partners (donors and recipient populations and funders) and translocation success 2008-2017[1]

Donor Population	***Funding Source***	***Recipient Population***	***RCWs (# pairs)***	***Retention Rate***[2]
2013 (2 biologists)				
Osceola NF	*USFWS/DoD*	J.W. Corbett WMA (FL)	3	50%
		Dupuis WEA (FL)	4	50%
		Picayune Strand State Forest (FL)	2	50%
Eglin AFB	*GADNR/ALDCNR/USFWS*	Conecuh NF (FL)	3	XX%[6]
		Ichauway (GA)	3	83%
		Shoal Creek RD, Talladega NF (AL)	3	33%
2014 (2 biologists)				
Osceola NF	*USFS*	J.W. Corbett WMA (FL)	4	25%
		Dupuis WEA (FL)	3	50%
Eglin AFB	*GADNR/ALDCNR/USFWS*	Chickasawhay NF	4	58%
		Talladega RD, Talladega NF (AL)	6	38%
2015 (2 biologists)				
Osceola NF	*USFS*	Avon Park (FL)	3	83%
		Silver Lake WMA (GA)	3	60%
		St. Sebastian River Preserve (FL)	4	38%
Eglin AFB	*GADNR/ALDCNR/USFWS*	Shoal Creek RD, Talladega NF (AL)	7	47%
		Conecuh NF (FL)	3	XX%[6]
2016 (2 biologists)				
Osceola NF	*USFS*	J.W. Corbett WMA (FL)	5	70%
		Hal Scott Regional Preserve (FL)	2 & 1 female	60%
		Goethe SF (FL)	3	83%
Eglin AFB	*GADNR/ALDCNR/USFWS*	Talladega RD, Talladega NF (AL)	5	40%
		DeSoto NF (MS)	5	50%
2017 (2 biologists)				
Osceola NF	*USFS*	J.W. Corbett WMA (FL)	5	*
		Bull Creek/Triple N Ranch	5	*
Eglin AFB	*GADNR/ALDCNR/USFWS*	Talladega RD, Talladega NF (AL)	6	*
		Shoal Creek RD, Talladega NF (AL)	4	*
			Average	51%

[1]*Data references personal communications with individual property recipient biologists and RCW Recovery Coordinator, Will McDearman (via multiple distributed SRTC retention spreadsheets).*
[2]*Retention Rate is defined as the presence of the translocated bird on the recipient property through the first breeding season after its release as either a breeder or potential breeder, solitary male or a helper. As of 2016, the overall average success rate was 52%.*

[3]Florida Fish and Wildlife Conservation Commission, [4]Georgia Department of Natural Resources, [5]Alabama Department of Conservation and Natural Resources.
[6]Adequate monitoring to determine retention rate was not accomplished
[7]Adequate monitoring to determine success was not accomplished, however, one individual was seen on the neighboring Blackwater River State Forest population in 2011.
**Retention rates are determined during the breeding season following the translocation; 2017 translocation data will be presented at the 2018 Southern Range Translocation Cooperative (SRTC) meeting held each August in Tallahassee, Florida.*

Appendix 2: Population trends for all past and current recipient populations participating in the SRTC (R. Costa 2/23/18)

Recipient Population	# Active Clusters 1998	2017	Status*(P or SP)	Offline
Avalon Plantation (FL)	0	15[1]	SS (P)	Y
Avon Park Bombing Range (FL)	23	38	ES (P)	Y
Babcock/Webb WMA (FL)	27	46	ES (P)	Y
Babcock Ranch Preserve	?	12	SS (P)	Y
Blackwater River SF (FL)	18	113	SC (3 SP)	Y
Bull Creek/Triple N Ranch (FL)	1	24	ES (P)	N
Camp Blanding Training Site (FL)	14	30	ES (P)	Y
Chickasawhay, West (MS)	10	55	PC (SP)	Y
Chickasawhay, East (MS)	0	16	PC (SP)	N
Conecuh NF, West (AL)	6	26	SC (SP)	N
Conecuh NF, East (AL)	8	28	SC (SP)	N
DeSoto RD, Biloxi HMA (MS)	6	53	SC (P)	Y
DeSoto RD, Black Creek HMA North (MS)	0	14	SC (SP)	Y
DeSoto RD, Black Creek HMA South (MS)	0	33	SC (SP)	Y
Disney Wilderness Preserve (FL)	0	12	SS (P)	Y
Dupris WEA (FL)	0	15	ES (P)	N
Enon Plantation (AL)	1	17	SS (SP)	Y
Ft. Gordon (GA)	1	31	SS (P)	N
Ft. Jackson (SC)	13	40	SS (P)	Y
Goethe SF, North (FL)	17	19	ES (SP)	N
Goethe SF, South (FL)	13	44	ES (SP)	Y
Hal Scott Regional Preserve & Park (FL)	6	12	ES (P)	Y
Ichauway (GA)	1	37	SS (P)	Y
J.W. Corbett WMA (FL)	12	30	ES (P)	N
Military Ocean Terminal Sunny Point (NC)	6	20[2]	SS (P)	Y
Moody Forest WMA	?	3	IS (P)	N
Ocala NF (FL)	13	118[2]	SC (2 SP)	Y
Okefenokee NWR (GA)	26	53	PC (1 SP)	Y
Picayune Strand SF (FL)	3	20	ES (P)	N
Platt Branch	?	6	SS (P)	N
Poinsett Electronic Combat Range (SC)	3	28	SS (P)	Y
Sehoy Plantation (AL)	4	18	SS (SP)	Y
Shoal Creek RD (AL)	6	27	ES (P)	N
Silver Lake (GA)	2	34	SS (P)	Y
St. Marks NWR, Panacea (FL)	7	35	PC (SP)	Y
St. Marks NWR, East (FL)	0	6	PC (SP)	N
St. Sebastian River Buffer Preserve (FL)	9	14	ES (P)	N
Tall Timbers Research Station (FL)	0	11	SS (P)	Y
Talladega RD (AL)	0	15	ES (P)	N
Wetapo Creek (FL)	2	12[3]	SS (P)	Y
Withlacoochee SF, Croom Tract (FL)	4	35	ES (P)	Y
TOTALS (38 Populations/Subpopulations)[4]	**262**	**1215**	**(26 Recovery) (26 P: 18 SP)**	**26Y:15N**

[1] estimate

[2] 2013 data

[3] 2014 data

[4] There are 44 populations/subpopulations: 2 Blackwater River SF and 1 Ocala NF are not listed; see column #4

*Status: SS = Significant Support; ES = Essential Support; SC = Secondary Core; PC = Primary Core. ES, SC and PC are recovery populations. P = Population; SP = Subpopulation