

# Vancouver Island Western Bluebird Reintroduction Program Summary Report 2013

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For:

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## **INTRODUCTION**

Ecostudies Institute (EI), Garry Oak Ecosystems Recovery Team (GOERT), the Province of British Columbia, and numerous other partners are working to reestablish a breeding population of Western Bluebirds (*Sialia mexicana*) via reintroduction to areas of their historic range on Vancouver Island, British Columbia. This effort is modeled after the successful establishment of a Western Bluebird population on nearby San Juan Island, WA, USA. Western Bluebirds were considered common in southwestern British Columbia in the first half of the twentieth century, but were extirpated from the mainland by the 1970s and from Vancouver Island by the mid-1990s. Unlike many species, the cause for the decline and regional extirpations of Western Bluebird was likely due to the loss of a particular habitat element - cavities for nesting - rather than the overall loss or degradation of their favored habitat type (prairie-oak). The establishment of nestbox programs to replace the loss of cavities in snags has been used successfully to restore bluebird populations in many areas of North America.

Today, suitable habitat of sufficient size exists on Vancouver Island and nearby Gulf Islands to support a viable population of Western Bluebirds. There has been a considerable amount of oak-prairie habitat conservation implemented through traditional strategies of land protection, habitat management, and education and outreach; in recent years, GOERT and partners have worked to establish nestboxes in areas with suitable habitat. However the closest donor population, found in South Puget Sound, WA, is >150 km to the south over mostly unsuitable habitat (water and urban/residential), making the likelihood of population reestablishment in this region through natural recolonization unlikely.

In 2012, project partners initiated a pilot reintroduction effort, translocating 4 pairs, two of which included dependent young. One pair successfully nested following release. With this initial success, project partners moved toward full implementation, with an overall goal of releasing > 90 adults to sites on Vancouver Island over a 5- to 6-year time period. This report summarizes the progress achieved during the second year of the project.

## **TRANSLOCATIONS**

During the 2013 breeding season, we conducted 9 translocation events, 6 involving pairs and 3 involving pairs with dependent young (Table 1). In total, 18 adults and 10 young were captured from the donor population at Joint Base Lewis McChord military base (JBLM). Translocated birds were placed in aviaries at 8 locations (one site used twice) in the Cowichan Valley (Fig. 1).

Translocations are considered successful when released individuals establish territories and exhibit breeding behavior. In 2013, translocation success of individuals translocated as pairs was 25% (3 of 12; Table 2). The range of annual success (2008-2011) for pairs on San Juan Island was 13-63%. All three translocations with juveniles were successful, as all six adults established territories and bred. This result continues the pattern of improved success following adjustments made to this technique in 2011 on San Juan Island (Slater 2012). Those adjustments include conducting translocations in late May or early June so family groups can be released by late June (allowing them time to renest) and releasing family groups when

fledglings are 1-5 d old (reducing the likelihood of dispersal from the release site). The success rate for translocated juveniles will not be determined until 2014.

### **POPULATION MONITORING**

The 2013 population size estimate for adult Western Bluebirds in the Cowichan Valley was 14, up from the estimate of 2 in 2012 (Fig. 2). This is a minimum population estimate, since it does not count individuals that may be established, yet were not found. The population is comprised of: four returning juveniles from 2012 (three that were translocated and one that fledged from Vancouver Island), a second-year female that fledged from San Juan Island in 2012, and adults translocated in 2013. The population includes two non-breeding adults, a male and a female.

The population is too small to estimate apparent survival rates; however we can evaluate annual return rates. Of the two breeding adults in 2012, neither returned to the Cowichan Valley, although 1 was found back at the donor population, yielding an adult return rate of 0.00. Of the eight juveniles in the population in 2012, four returned, yielding a return rate of 0.50. Like most population variables estimated in this report, return rates are based on extremely low sample sizes, so should be viewed cautiously. Return rate estimated from San Juan Island in 2013 were 0.17 for adults and 0.10 for juveniles. The return rate for San Juan Island adults was the lowest observed during any year of monitoring (2009-2013).

We monitored six breeding territories in the population and the fate of seven nests (Fig. 3). Five of seven (71%) nests were successful, and 22 young successfully fledged (Table 3). Of the two nests that failed, one failed due to abandonment and one was depredated. At the depredated nest, the nest was destroyed inside the box and the adult female was killed, with her feathers found in a pile about 1 meter away. Evidence points to a mammalian predator, such as a raccoon.

Mean (SD) clutch size (first attempts) was 6.7 (0.6; n = 3); mean young per nest was 3.1 (2.6; n = 7); and mean young per breeding female was 3.7 (2.4; n = 6). Clutch size and mean young per nest estimates were higher than those determined on San Juan Island: clutch size = 5.0 (1.0, n = 3), mean young per nest = 2.4 (2.5, n = 10). Mean young per breeding female was lower than the estimate from San Juan Island (4.1, SD = 4.5, n = 6).

Overall, the project has met initial short-term success benchmarks. Population size, the number of territories, and the number of nests in 2013 were higher than observed in 2012.

Table 1. Summary of Western Bluebird translocation events conducted in 2013.

Translocation event	Translocation Type	Capture date	FWS Band	Left leg	Right leg	Sex	Age	AviaryID	Days held	Release date	Territory location
2013_01	Pair Ig	3/18/2013	2571-85222	LW	AL/L	female	ASY	CARS_01	21	4/8/2013	
2013_01	Pair Ig	3/18/2013	2571-85221	AL/L	RY	male	ASY	CARS_01	21	4/8/2013	
2013_02	Pair Ig	3/24/2013	2571-85223	AL/R	PL	female	SY	CARS_02	15	4/8/2013	
2013_02	Pair Ig	3/24/2013	2571-85225	YO	AL/R	male	SY	CARS_02	15	4/8/2013	
2013_03	Pair Ig	3/24/2013	2571-44644	YY	O/AL	female	ASY	HALV	15	4/8/2013	CGOP
2013_03	Pair Ig	3/24/2013	2571-85224	O/AL	PP	male	ASY	HALV	15	4/8/2013	HALV
2013_04	Pair Ig	4/10/2013	2571-85226	C/AL	OO	male	ASY	CARS_01	13	4/23/2013	
2013_04	Pair Ig	4/10/2013	2571-85227	WW	C/AL	female	SY	CARS_01	13	4/23/2013	
2013_05	Pair Ig	4/10/2013	2571-85228	GG	AL/B	female	SY	WIEB	21	5/1/2013	
2013_05	Pair Ig	4/10/2013	2571-85229	AL/B	LW	male	ASY	WIEB	21	5/1/2013	PEST
2013_06	Pair Ig	4/10/2013	2571-85230	PG	W/AL	male	ASY	CGOP_02	15	4/25/2013	
2013_06	Pair Ig	4/10/2013	2571-85300	W/AL	GY	female	ASY	CGOP_02	15	4/25/2013	
2013_07	Pair with Juv	5/29/2013	2571-85235	Y/AL	BB	female	SY	VAND	15	6/13/2013	VAND
2013_07	Pair with Juv	5/29/2013	2571-85236	VV	Y/AL	male	ASY	VAND	15	6/13/2013	VAND
2013_07	Pair with Juv	5/29/2013	2571-85233	PO	Y/AL	Female	L	VAND	15	6/13/2013	VAND
2013_07	Pair with Juv	5/29/2013	2571-85232	GL	Y/AL	Female	L	VAND	15	6/13/2013	VAND
2013_07	Pair with Juv	5/29/2013	2571-85234	Y/AL	PG	Female	L	VAND	15	6/13/2013	VAND
2013_07	Pair with Juv	5/29/2013	2571-85231	Y/AL	WO	male	L	VAND	15	6/13/2013	VAND
2013_08	Pair with Juv	5/31/2013	2441-50589	P/AL	GO	Female	ASY	CARS_03	12	6/12/2013	CARS
2013_08	Pair with Juv	5/31/2013	2441-50573	P/AL	LL	male	ASY	CARS_03	12	6/12/2013	CARS
2013_08	Pair with Juv	5/31/2013	2571-85237	OW	P/AL	female	L	CARS_03	12	6/12/2013	CARS
2013_08	Pair with Juv	5/31/2013	2571-85239	RB	P/AL	unknow	L	CARS_03	12	6/12/2013	CARS
2013_08	Pair with Juv	5/31/2013	2571-85240	P/AL	YY	unknow	L	CARS_03	12	6/12/2013	CARS
2013_08	Pair with Juv	5/31/2013	2571-85241	P/AL	VW	unknow	L	CARS_03	12	6/12/2013	CARS
2013_09	Pair with Juv	6/5/2013	2571-44673	LL	AL/V	female	SY	SHOC	9	6/14/2013	SHOC
2013_09	Pair with Juv	6/5/2013	2571-85242	AL/V	CC	male	SY	SHOC	9	6/14/2013	SHOC
2013_09	Pair with Juv	6/5/2013	2571-85244	BB	AL/V	male	L	SHOC	9	6/14/2013	SHOC
2013_09	Pair with Juv	6/5/2013	2571-85243	YR	AL/V	male	L	SHOC	9	6/14/2013	SHOC

Table 2. Number of Western Bluebirds translocated to Vancouver Island and their fate.

	2012	2013
Adults translocated as pair	4 <sup>a</sup>	12
Established territory	0 (0)	3 (25%)
Unknown fate	4	10
Adults translocated with nestlings	4	6
Established territory and bred	2 <sup>b</sup> (50%)	6 (100%)
Nestlings translocated	9	10
Returned to Vancouver I.	3 (33%)	* <sup>c</sup>

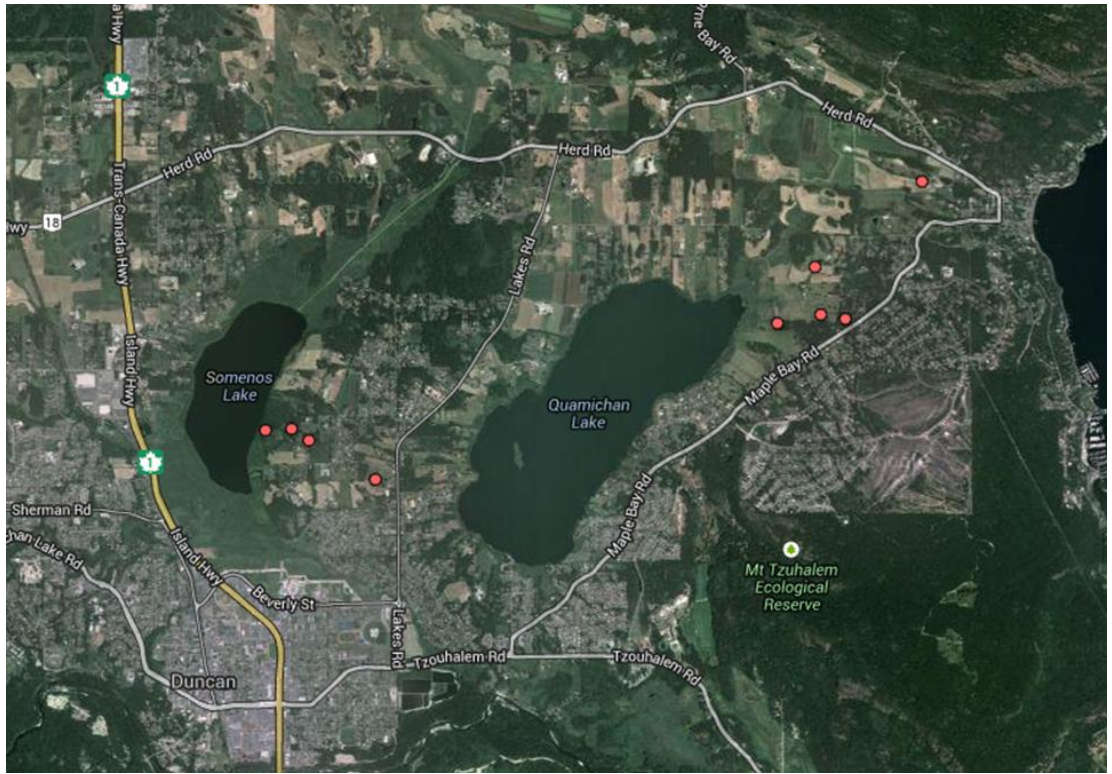
<sup>a</sup> This period reflects when pilot translocation were conducted. These events were conducted outside of the preferred time period for translocations of pairs. One pair was observed nest-building the day following release, but subsequently disappeared.

<sup>b</sup> One adult returned to donor population in 2013, after nesting on Vancouver Island in 2012.

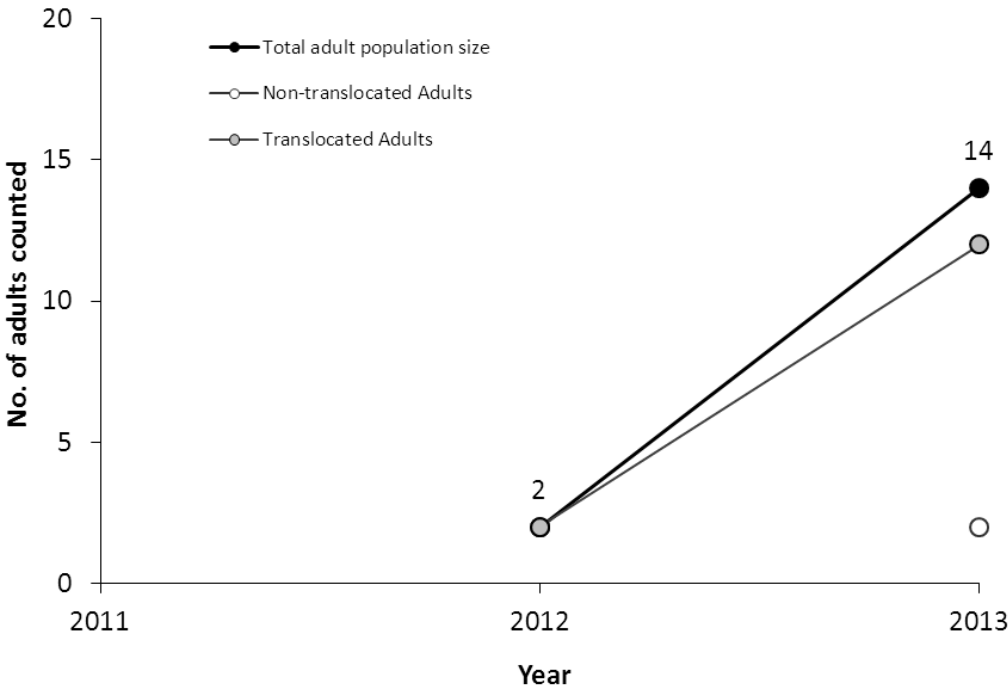
<sup>c</sup> \* Signifies that results will not be determined until 2014.

Table 3. Summary of Western Bluebird nesting attempts during 2013 breeding season.

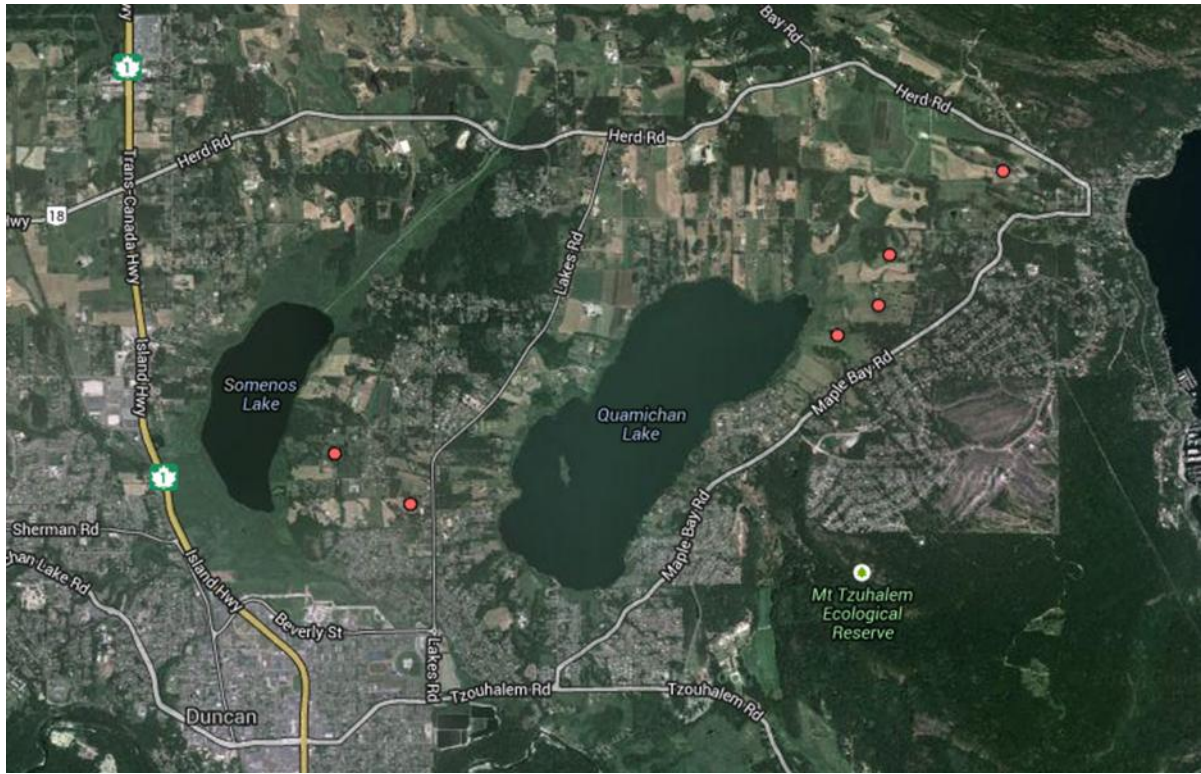
Territory	Attempt	Clutch size	Eggs hatched	Banded	Fledged		Comments
					Assumed	Confirmed	
HALV	1	7	6	0	0	0	Nest abandoned; pair disappeared
PEST	1	7	6	6	6	6	
CGOP	1	6	5	5	5	5	
CARS	2	5	3	3	3	3	
SHOC	2	6	6	6	6	6	
VAND	2	4	3	2	2	2	
PEST	2	6	6	0	0	0	Depredated. Female killed.
<b>Totals</b>			<b>35</b>	<b>22</b>	<b>22</b>	<b>22</b>	



**Figure 1.** Location of Western Bluebird release sites in the Cowichan Valley, BC in 2013.



**Figure 2.** Adult population size of Western Bluebirds on Vancouver Island, BC.



**Figure 3.** Location of Western Bluebird nest sites in the Cowichan Valley, BC in 2013.