

Williamson's Sapsucker Baseline Population Monitoring in the Western Region Area of Occupancy

July 13, 2010

Prepared for:

Ian Parnell
Canadian Wildlife Service
5421 Robertson Rd
Delta, BC V4K 3N2
Telephone: 604.940.4649
E-mail: ian.Parnell@ec.gc.ca



Photo: Chris Gill

Kestrel
consulting

Chris Gill, MSc, RPBio
775 Abbington Lane, Tappen, BC V0E2X3
Ph: (250) 835-8256
Email: chris@kestrelwildlife.com

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Introduction

Williamson's Sapsucker (WISA) is a migratory bird and species at risk. It is an Endangered COSEWIC-listed species that is listed on Schedule 1 of the Act, and is also listed as Identified Wildlife under the British Columbia Forest and Range Practices Act (FRPA). The primary reason for these designations is the loss of suitable breeding habitat resulting from forest harvesting and private land clearing (COSEWIC 2005).

A draft federal Recovery Strategy has been completed for this species and development of the federal Action Plan is under way. Critical habitat for the WISA will be identified in the federal Action Plan for the three Areas of Occupancy (AO) of this species in British Columbia. The AO had been previously determined using the results of call playback surveys conducted from 1996-2007 (Gyug et al. 2007, Gyug 2007). The AO is the area where suitable WISA breeding habitat is likely to be present.

In 2010 Environment Canada's Canadian Wildlife Service (CWS) undertook call-playback surveys for WISA at randomly selected points within its currently identified AO. The purpose of this work is to start baseline population monitoring and provide data to develop the WISA Adaptive Monitoring Framework.

An Adaptive Monitoring Framework (AMF) is being developed for two primary reasons:

1. To track the status of WISA populations to ensure the various recovery actions are meeting the recovery goal of population maintenance; and
2. To evaluate a proposed management regime developed by the WISA Recovery Team for maintaining functional WISA habitat in a managed landscape ('Guiding Principles') to demonstrate it can be considered to 'effectively protect' WISA critical habitat on non-federal lands as required under the Act.

Initial work on the AMF has begun and it is intended to develop over time. A number of key logistical and statistical questions must be answered to aid the design of an optimal program. The selected index of abundance is the number of positive call-playback (CPB) responses within select strata across the three WISA Areas of Occupancy. The design of an optimal program based on this index requires learning about: CPB logistics, variability in CPB response within strata, practical levels of stratification, and the 'probability of detection' for the CPB survey method. The data that was collected under this contract will help address these questions and also initiate statistically valid estimates of baseline population abundance.

Project Objectives

1. Conduct call-playback surveys at randomly chosen points within the WISA Area of Occupancy (Western region); and
2. Estimate $p(\text{detection})$ for a subset of the randomly chosen points with no initial call-playback response.

Methodology

Objective 1:

- A. Determine presence/not-detected of WISA within the area of occupancy at randomly selected points using a simple CPB method.
 - Points: Conduct call-playbacks at 135 randomly selected points stratified by habitat suitability class within the WISA AO.
 - First CPB protocol: Call-playbacks will consist of 10 seconds of audio played in each of 3 different directions with 20 seconds of silence between each 10 seconds of playback. Playbacks will be broadcast using a megaphone that is capable of broadcasting 600 m in open habitats (refer to FIA 2006a for more information).

- B. Record all detections
 - If presence detected, record location of estimated first detection location, estimated distance, direction, type of behaviour, and if detection was within a 400 m radius of the point.
- C. Record dominant habitat type and secondary habitat type.
- D. Record Logistics Information:
 - # random points/day, time at random points, time travelling between points, etc.

Objective 2:

- A. For a randomly selected subset of points collect data for estimating probability of detection using either: repeat visits or a second more rigorous protocol.
 - Repeat visits: For a subset of 21-30 points, revisit the points on at least 2 subsequent dates throughout the sampling window, each visit separated by 2-3 days. Repeat the Objective 1 call-playback protocol.
 - Second CPB protocol: Within each day of regular sampling under Objective 1, randomly select approximately two to three non-detection CPB points. At these points, immediately after completing the first CPB protocol, establish three additional call playback points at distances >75 m from the central point in orthogonal directions and repeat the Objective 1 call-playback protocol. Searching will be limited to 20 minutes to avoid drawing in birds from outside of the original 400 m radius sampling unit.
- B. Record all detections
 - If presence detected, record location of estimated first detection location, estimated distance, direction, type of behaviour, and if detection was within the 400 m radius from the central random point.
- C. Record dominant habitat type around each point and secondary habitat type (protocol to be provided)
- D. Record Logistics Information: In addition to logistical information under Objective 1, record the time spent conducting the $p(\text{detection})$ Assessments.

Results & Discussion

One hundred and fifty WISA call playback stations were completed between May 20 and June 7, 2010 in the Western Region of this species' AO (see Appendix 1). Seventeen of the 150 call playback stations could be accessed directly by vehicle and 133 required walking. Eighty-one of the walk-in sites could be reached within 5 minutes and 53 could be reached within a 30 minute walk.

Fifteen call playback stations could not be completed because of access issues (Table 1). Ten stations fell on private property and the land owners could not be contacted. Other sites could not be accessed due to steep terrain/valleys in between road access and the call playback station, fast flowing creeks/rivers between road access and call playback station, or lack of road access within 1 km of the station.

Table 1. Dropped call playback points.

CPB Point Ranking	Total
Very Low	8
Low	4
Moderate	3

WISA Detections

Detections were recorded at 19 stations, not including detections during repeat visits to the same call playback station (Figure 1). Additionally, five incidental detections were recorded en route to call playback stations.

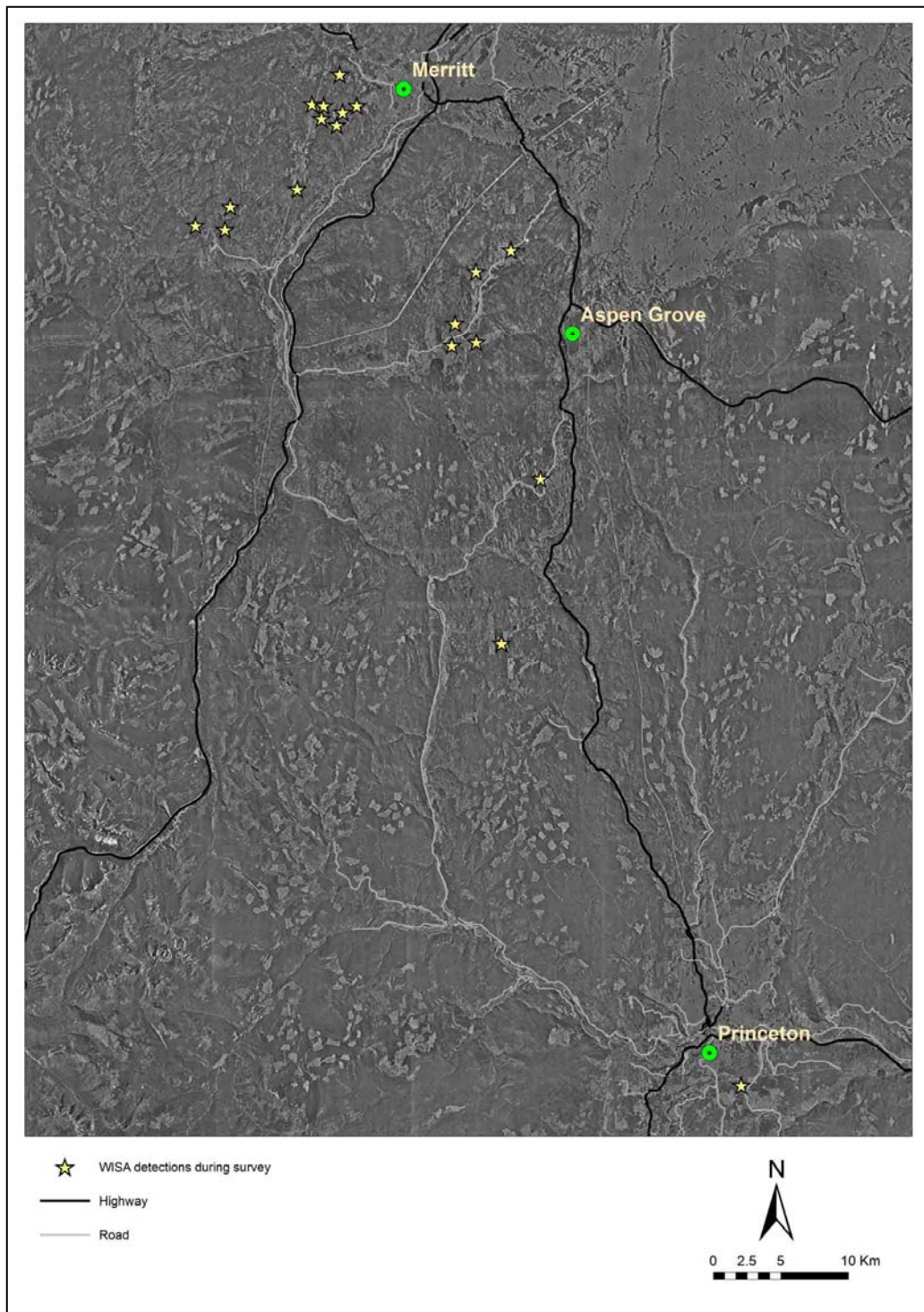


Figure 1. WISA detections in the Western AO.

The majority of call playback stations where detections occurred during the survey were identified by the model as moderate habitat suitability (74%, n=14). The remaining detections occurred at low habitat suitability sites (26%, n=5). This suggests that the model is quite accurate at predicting the location of suitable habitat for WISA at least in the Western AO.

Extended Surveys & Repeat Visits

Extended surveys were conducted at 56 call playback stations where birds were not detected during the initial call playback (see Appendix 1). Birds were located at five of these stations, which suggests the benefit of this technique at locating birds that do not respond to the initial call playback.

In addition to the extended surveys, 28 call playback stations were selected for repeat visits between May 25 and June 7, 2010 (Table 2). Repeat visit stations were selected based on accessibility and proximity to other repeat sites (L. Gyug pers comm.). The repeat visits were scheduled to occur on two subsequent dates within one week of the first visit for a total of three visits.

Birds were detected at 11 (39%) of the repeat call playback stations. However, in most cases birds were only detected during one of the visits to the station (64%, n=7, Table 2). At three of these single detection stations (43%) the detection occurred on the second or third visit. This observation emphasizes the need to conduct repeat visits in areas of suitable WISA habitat.

Extended surveys were also carried out at five of the repeat sites where no birds were detected during the final repeat visit. This technique resulted in detections at four of the five sites (see Table 2).

Table 2. Repeat visit call playback stations and detections.

CPB Station	1st Visit	2nd Visit	3rd Visit	Detection During Extended Survey after final repeat visit?
R10WL10	Null	Null	Null	Not used
R10WL16	Null	Yes	Yes	Not used
R10WL20	Null	Null	Null	Not used
R10WL24	Null	Yes	Null	Yes
R10WL44	Null	Null	Null	Not used
R10WM07	Null	Null	Null	No
R10WM09	Yes	Yes	Yes	Not used
R10WM13	Null	Null	Null	Not used
R10WM14	Null	Null	Yes	Not used
R10WM16	Yes	Yes	Yes	Not used
R10WM18	Null	Null	Yes	Not used
R10WM20	Yes	Yes	Null	Yes
R10WM23	Null	Null	Null	Yes
R10WM25	Yes	Null	Null	Yes
R10WM27	Null	Null	Null	Not used
R10WM32	Null	Null	Null	Not used
R10WM35	Yes	Null	Null	Not used
R10WM39	Yes	Null	Null	Not used
R10WM47	Null	Null	Null	Not used
R10WM48	Null	Null	Null	Not used
R10WM52	Yes	Null	Null	Not used

CPB Station	1st Visit	2nd Visit	3rd Visit	Detection During Extended Survey after final repeat visit?
R10WM40	Null	Null	Null	Not used
R10WL22	Null	Null	Null	Not used
R10WL01	Null	Null	Null	Not used
R10WL08	Null	Null	Null	Not used
R10WL36	Null	Null	Null	Not used
R10WM24	Null	Null	Null	Not used
R10WV29	Null	Null	Null	Not used

Extended & Repeat Survey Experiment

One call playback station was accidentally visited several times throughout the survey period (R10WM18). The first visit occurred on May 25, 2010 with no birds detected. An extended survey was then completed that also failed to detect any birds. This station was then revisited on May 27, May 31 and June 2, 2010 by a different observer. A bird was detected on the last day this call playback station was visited. This experiment again indicates the benefit of revisiting sites containing suitable habitat more than once during the breeding season to ensure birds are not missed during the initial survey.

Nest Searches

Nest searches were undertaken at 14 call playback stations where birds were detected during the call playback inventory survey. A total of 6 previously unknown nests were located, all of which occurred at stations identified as moderate habitat suitability by the model (Table 3). Two additional nests were found during the actual inventory survey (R10WL16NEST and R10WL30NEST) and are also included in Table 3. Both of these nests were found at stations identified as low habitat suitability by the model. Distances from the call playback stations to the nest sites varied significantly ranging from 66 m to over 500 m (n=8). Nest elevation averaged 1032 m (range: 848-1177 m, n=6).

Five of the nests discovered during the nest search were in trembling aspen (*Populus tremuloides*) and one nest was in a Douglas-fir (*Pseudotsuga menziesii*).

Table 3. Nest UTM's (NAD83) and distance to original call playback station.

Nest Label	Easting	Northing	Elevation	Distance to CPB Station (m)
R10WM01NEST	683396	5478161	848	160
R10WM19NEST	665813	5510816	1177	119
R10WM20NEST	651420	5551242	1050	400
R10WM23NEST	652114	5551002	978	501
R10WM25NEST	652373	5549871	974	96
R10WM46NEST	666129	5540007	1163	380
R10WL16NEST	662387	5534770	NA	66
R10WL30NEST	663763	5538497	NA	163

The time to locate each of the six nests discovered during the nest search ranged from 18 minutes to 122 minutes. Figure 2 shows the nest search routes at three call playback stations where WISA were detected during the original survey and the actual nest locations.

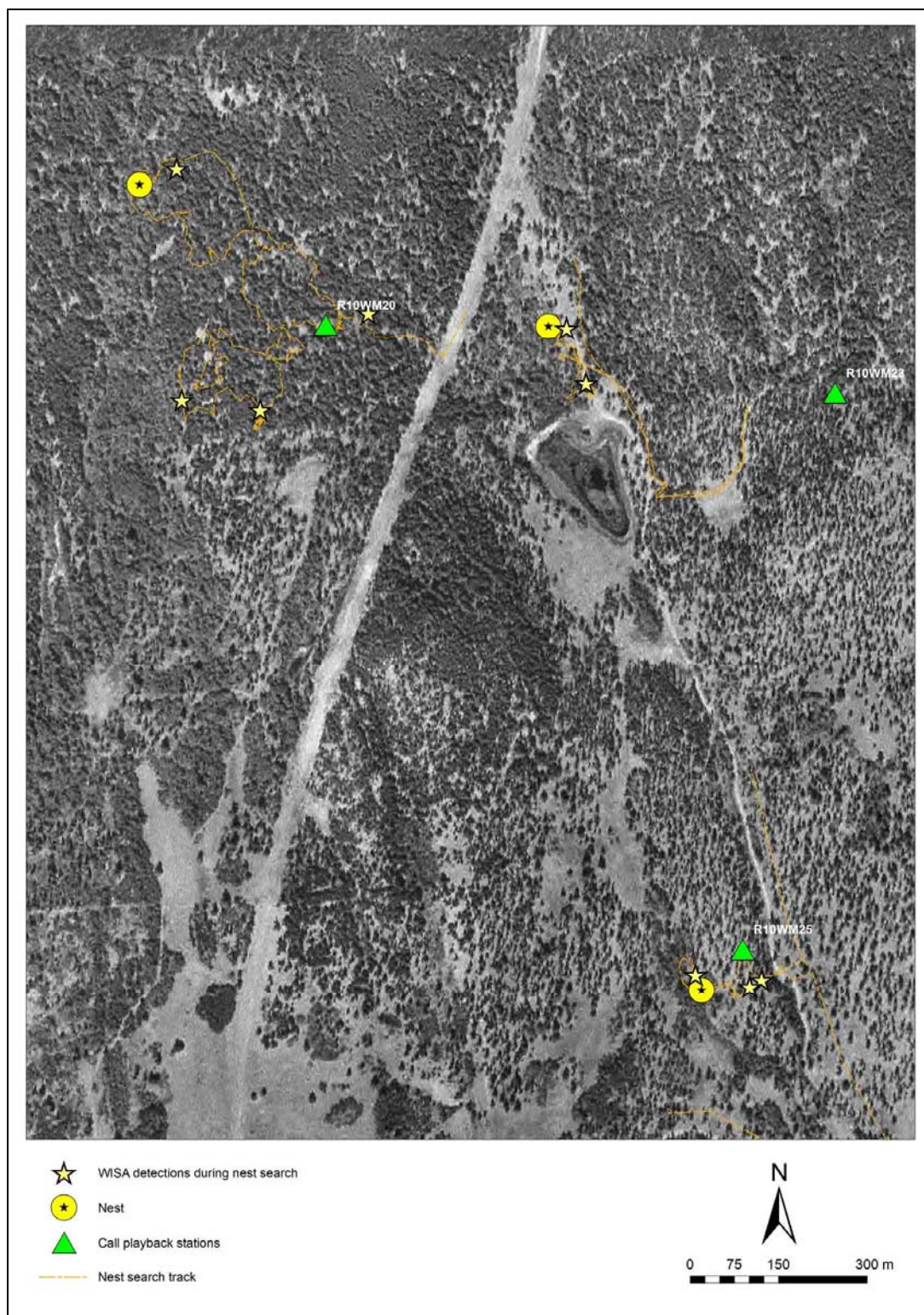


Figure 2. Examples of nest search routes at three call playback stations

Simple Habitat Protocol

A simple habitat protocol was tested at the 14 call playback stations where nest searches were undertaken, and at the six of the newly discovered nest sites (Table 4). Generally the habitat data could be collected quickly (in most cases in 1 to 2 minutes) and accurately. However it was difficult to estimate tree density (stems per hectare) without reference standards. Therefore this aspect of the simple habitat protocol may require further discussion before implementation.

Table 4. Example simple habitat protocol data from the six nests sites.

Nest Label	Recent site history*	Slope	Nest tree data			
			Tree species	Tree class (1-8)	Tree DBH (cm)	Distance to nearest forest edge (m)
R10WM01NEST	PartCut	10-30%	Fd	3	355	Not applicable
R10WM19NEST	PartCut	0-10%	At	3	100	Not applicable
R10WM20NEST	Matforh	0-10%	At	6	132	Not applicable
R10WM23NEST	PartCut	0-10%	At	2	114	200
R10WM25NEST	PartCut	0-10%	At	2	63	200
R10WM46NEST	PartCut	0-10%	At	3	120	10

*PartCut = Partial cut, Matforh = Mature forest with previous harvest.

Data Entry

The data collected from this project was entered into SPI data format and provided to Environment Canada. Nest locations were also provided to the Kamloops Ministry of Environment (John Surgenor, regional wildlife biologist and Francis Iredale, wildlife biologist) to be assessed for future Wildlife Habitat Area designation if they fall within Crown land.

Observations & Recommendations

Timing for Future WISA Surveys

WISA respond to call playbacks any time in the breeding season. Generally responses are greatest in the first 2 weeks after the birds arrive on the breeding range (late March or early April) as males establish breeding territories and attempt to attract females (FIA 2006a). Responses to call playbacks decrease from this point until the young have fledged (usually late June or early July) because the pair is often spending more time feeding nestlings than defending territories.

The WISA inventory surveys were conducted between May 20 and June 7, 2010 while the nest searches were carried out between June 14 and June 18, 2010. During the repeat station visits and nest searches several birds were detected visually but did not respond to the call playback. Because of a potential decrease in response rates to call playbacks later in the breeding season it may have been beneficial to conduct an initial WISA survey in April/May to identify occupied territories (repeat and extended survey techniques should be implemented if suitable habitat is present). If nesting success data is required, observers could revisit occupied sites in mid-June to search for the nest tree and collect relevant information.

Assessment of Habitat Data Collection Protocols

It was sometimes difficult to classify a call playback station by the habitat codes provided. For example, L. Gyug (pers comm.) defined mature forest with previous harvest (Matforh) as areas with stumps that were greater than 20 years old, whereas a partial cut (PartCut) was defined as a site with stumps less than 20 years old. The western region of the AO is characterized by a moderately dry climate and because of this stumps can remain intact for many years making it difficult to determine if they are greater than or less than 20

years old. A better method might be to categorize sites with very old stumps showing signs of deterioration (rotting, falling apart) as mature forest with previous harvest, sites with weathered but intact stumps categorized as partial cut/old, and sites with new stumps categorized as partial cut/new. A similar categorization might be useful with burns because the habitat present at an old burn site is very different from a more recent burn.

The simple habitat protocol data could be collected quickly (in most cases in 1 to 2 minutes) and accurately. However it was difficult to estimate tree density (stems per hectare) without reference standards. Therefore this aspect of the simple habitat protocol may require further discussion before implementing the protocol.

Reference standards with photos would help to increase accuracy and consistency of habitat data collection among researchers.

General Observations During Surveys & Recommendations

- TRIM road data was not a useful tool for navigating to the call playback stations because it is outdated and often inaccurate. A better option is to use survey tracks from Les Gyug, myself, and others to develop an up to date road networks for each AO. Knowing which roads are drivable would save time for future surveys if the call playback stations fall within the same general area.
- Several call playback stations designated as moderate habitat had recently been harvested. Others were in the process of being harvested. One station (R10WL39) that was scheduled to be a repeat visit site had to be canceled because harvesting had started shortly after the first visit. It would therefore be beneficial to obtain up to date BC Timber Sales proposed and approved cut blocks spatial data and apply this data to the habitat model.
- No birds were detected at sites identified as very low habitat suitability and the habitat present at these sites generally lacked the key characteristics that are often associated with this species. It is therefore probably not necessary to survey areas identified by the model as very low habitat suitability at least in the Western AO in the future.
- Both repeat and extended surveys were useful for locating occupied territories where birds did not initially respond to the call playback. However, I believe that repeat visit surveys are likely the best option for detecting birds. For example, at three of the repeat stations the detection occurred on the second or third visit.

Acknowledgements

Steve Ogle assisted with the inventory surveys near Merritt and Princeton. Les Gyug also assisted with surveys near Merritt and provided valuable advice that helped streamline the surveys. We are grateful to the property owners that granted us access to call playback stations that fell on their land. Special thanks to Ian Parnell of Environment Canada for involving me in this interesting project.

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Appendix 1

Appendix 1. Results of the random call playback survey in the Western Region.

Survey Name	Study Area Name	Survey Intensity		Date	Surveyors	CPB Station	Type CPB		Time Start	Type of Access	Time to Walk in	Air Temp (C)	Wind Speed	Cloud Cover	Current Precipitation	Species	WISA V/D/C	Detect Type	Detect Dir (deg)	Detect Dist (m)	Count	Life Stage	Sex	Activity	WISA ID	Final Assigned WISA Site	Comments	Three Tree Species	Main Canopy Ht	Trees >57-cm DBH Present	PartCut	Habitat Code	
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WL02	First		10:00:00 AM	Walk	10		1	1	N	NULL													FdPISx	>20	Y	PartCut (Patch)		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WL02	Ext		10:05:00 AM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WL06	First		7:27:00 AM	Walk	10		0	1	N	NULL													AtFdPy	10-20	N		Aspen Grove	
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WL06	Ext		7:32:00 AM							NULL																		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WL09	First		10:38:00 AM	Walk	28		1	1	N	NULL													FdAtPI	10-20	N	PartCut		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WL18	First		7:05:00 AM	Walk	1		0	1	N	NULL													FdPyAt	>20	Y	MatFor		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WL29	First		8:34:00 AM	Walk	10		0	1	N	NULL													FdPy	>20	N	MatFor/h		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WL30	First		8:31:00 AM	Walk	28		0	1	N	B-WISA	DC	H	219	150	1	A	M	TE				FdPy	>20	N	PartCut			
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WL31	First		9:14:00 AM	Walk	3		1	1	N	NULL													FdPy	>20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WL35	First		7:40:00 AM	Walk	15		0	1	N	NULL													FdAtPI	10-20	N	PartCut		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WL38	First		10:43:00 AM	Walk	30		2	2	N	NULL													FdPy	10-20	N	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WL47	First		6:21:00 AM	Walk	3		0	1	N	NULL													FdPIAt	>20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WM05	First		6:55:00 AM	Walk	10		0	1	N	NULL													FdATPI	>20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WM05	Ext		7:00:00 AM							NULL																		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WM17	First		6:05:00 AM	Walk	1	5	0	1	N	NULL													FdPIPy	<5	Y	ST Cut RES		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WM18	Ext		12:00:00 PM							NULL																		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WM26	First		11:39:00 AM	Walk	7	15	1	2	N	NULL													PIAtPy	10-20	Y	MF		
Stratified Random CPB	West	RA	21-May-2010	Les Gyug	R10WM26	Ext		11:44:00 AM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WM46	First		6:52:00 AM	Walk	2		0	1	N	B-WISA	DC	H	237	150	1	A	M	TE				FdPy	>20	N	MatFor/h			
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WV04	First		9:28:00 AM	Walk	19		1	1	N	NULL													FdAt	10-20	N	MatFor/h		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WV04	Ext		9:33:00 AM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Les Gyug	R10WV38	First		11:16:00 AM	Walk	21		2	2	N	NULL													FdPyPI	10-20	N	MatFor/h		
Stratified Random CPB	West	RA	20-May-2010	Chris Gill	R10WL19	First		6:25:00 PM	Walk	5		3	3	N	NULL													FdAt	5-10	Y	MatFor/h		
Stratified Random CPB	West	RA	20-May-2010	Chris Gill	R10WL45	First		7:36:00 PM	Walk	10		3	3	N	NULL													FdAtPI	10-20	Y	MatFor/h		
Stratified Random CPB	West	RA	20-May-2010	Chris Gill	R10WV18	First		5:09:00 PM	Road	0		3	3	N	NULL													FdPy	5-10	N	MatFor/h		
Stratified Random CPB	West	RA	20-May-2010	Chris Gill	R10WV18	Ext		5:18:00 PM							NULL																		
Stratified Random CPB	West	RA	20-May-2010	Chris Gill	R10WV44	First		4:57:00 PM	Walk	1		3	3	N	NULL													PP	<5	N	CC		
Stratified Random CPB	West	RA	20-May-2010	Chris Gill	R10WV53	First		7:00:00 PM	Walk	15		3	3	N	NULL													FdPy	5-10	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WL25	First		9:14:00 AM	Walk	1		2	1	N	NULL													Fd	5-10	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WL37	First		12:54:00 PM	Walk	5		2	2	N	NULL													FdPy	10-20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WM03	First		10:42:00 AM	Walk	5		2	2	N	NULL													FdPy	10-20	Y	MatFor		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WM08	First		1:40:00 PM	Walk	1		2	2	N	NULL													FdPy	10-20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WM11	First		7:33:00 AM	Walk	1		1	1	N	NULL													Fd	10-20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WM15	First		12:28:00 PM	Walk	5		2	2	N	NULL													FdPy	10-20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WM31	First		3:43:00 PM	Road	0		2	2	N	NULL													FdPyAt	10-20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WM31	Ext		3:48:00 PM							NULL																		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WV07	First		6:22:00 AM	Walk	1		1	1	N	NULL													FdPy	10-20	Y	MatFor/h		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WV07	Ext		6:28:00 AM							NULL																		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WV13	First		11:13:00 AM	Walk	10		2	2	N	NULL														FdPy	<5	N	CC (old with regen)	
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WV13	Ext		11:24:00 AM							NULL																		
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WV14	First		3:06:00 PM	Walk	10		2	2	N	NULL														FdPy	10-20	Y	MatFor/h	
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WV27	First		9:55:00 AM	Walk	1		2	1	N	NULL														PyFd	<5	N	CC	
Stratified Random CPB	West	RA	21-May-2010	Chris Gill	R10WV47	First		10:15:00 AM	Walk	5		2	2	N	NULL														Py	<5	N	Burn	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WL44	First		2:16:00 PM	Walk	5		2	4	N	NULL														FdPy	5-10	N	Matfor	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM09	First		1:34:00 PM	Walk	2		1	4	N	B-WISA	D	H	260	75	1	A	U	TE					FdPy	10-20	Y	MatFor		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM14	First		10:09:00 AM	Walk	5		2	3	N	NULL														PyFd	>20	Y	MatFor	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM16	First		7:29:00 AM	Walk	20	4	1	2	N	B-WISA	VC	S	160	30	2	A	MF	TE					FdPy	5-10	Y	MatFor		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM20	First		9:05:00 AM	Walk	5		2	2	N	B-WISA	VC	S	50	50	1	A	M	TE					FdPy	>20	Y	MatFor/h		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM23	First		9:24:00 AM	Walk	5		1	2	N	NULL														FdPy	>20	Y	PartCut	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM25	First		9:42:00 AM	Walk	1		2	3	N	B-WISA	VC	S	160	75	1	A	M	TE					PyFd	>20	Y	PartCut		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM29	First		11:13:00 AM	Road	1		2	3	N	NULL														Py	10-20	Y	CCRes	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM44	First		2:16:00 PM	Walk	18		2	4	N	B-WISA	D	H	280	100	1	A	U	TE					FdPy	>20	Y	MatFor		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM47	First		8:30:00 AM	Road	0		1	2	N	NULL														FdAt	>20	Y	MatFor/h	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM47	Ext		8:35:00 AM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM48	First		3:14:00 PM	Walk	5		1	4	LR	NULL														FdPyAt	>20	Y	MatFor	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WM48	Ext		3:20:00 PM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WV17	First		5:31:00 PM	Walk	5	15	1	4	N	NULL														PyFd	10-20	Y	Matfor	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WV20	First		10:46:00 AM	Walk	10		2	3	N	NULL														FdPy	>20	Y	MatFor	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WV32	First		11:30:00 AM	Walk	3		2	3	N	NULL														PyFd	>20	Y	MatFor	
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WV32	Ext		11:36:00 AM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Chris Gill	R10WV36																												

Appendix 1. Results of the random call playback survey in the Western Region.

Survey Name	Study Area Name	Survey Intensity		Date	Surveyors	CPB Station	Type CPB	Time Start	Type of Access	Time to Walk in	Air Temp (C)	Wind Speed	Cloud Cover	Current Precipitation	Species	WISA V/D/C	Detect Type	Detect Dir (deg)	Detect Dist (m)	Count	Life Stage	Sex	Activity	WISA ID	Final Assigned WISA Site	Comments	Three Tree Species	Main Canopy Ht	Trees >57-cm DBH Present	Habitat Code	
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV11	First		12:03:00 PM	Walk	5		1	4	N	NULL											Private property. Got permission to access CPB point. Farmer's name is Lou	AtFd	10-20	N	OR	
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV23	First		6:32:00 AM	Walk	2	6	1	4	N	NULL												FdPyBc	>20	Y	MatFor/h	
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV23	Ext		6:39:00 AM							NULL																
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV25	First		7:13:00 AM	Road	0		1	4	N	NULL											RNSA	At	<5	N	OR	
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV26	First		8:30:00 AM	Walk	1		1	4	N	NULL												PIFd	5-10	N	Matfor	
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV28	First		12:32:00 PM	Walk	2		1	4	N	NULL												PyAtFd	>20	Y	Matfor/h	
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV28	Ext		12:38:00 PM							NULL																
Stratified Random CPB	West	RA	26-May-2010	Chris Gill	R10WV43	First		9:28:00 AM	Road	0	15	2	4	N	NULL											HAWO	LpFdAt	>20	Y	Matfor	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WL28	First		1:55:00 PM	Walk	15		2	4	N	NULL											Private property	Fd	5-10	N	PartCut	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WL46	First		10:50:00 AM	Walk	1		2	4	N	NULL												FdPy	>20	Y	PartCut	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WL46	Ext		10:55:00 AM							NULL																
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WM34	First		12:52:00 PM	Walk	10		1	4	N	NULL												Fd	>20	Y	PartCut	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WV06	First		3:09:00 PM	Walk	15	14	2	4	N	NULL												PIFd	>20	N	Matfor/h	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WV08	First		11:51:00 AM	Walk	10		2	4	N	NULL												FdPy	10-20	Y	PartCut	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WV48	First		9:15:00 AM	Walk	2		1	3	N	NULL												FdWsAt	>20	Y	PartCut	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WV51	First		8:07:00 AM	Walk	1		1	4	N	NULL												WsFdAt	>20	Y	Matfor/h	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WV52	First		7:10:00 AM	Walk	3	6	1	4	N	NULL												FdAtEs	>20	Y	Matfor/h	
Stratified Random CPB	West	RA	27-May-2010	Chris Gill	R10WV52	Ext		7:18:00 AM							NULL																
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WL44	Repeat1		11:37:00 AM	Walk	2		1	4	N	NULL																
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WL55	First		11:15:00 AM	Road	0		1	4	LR	B-WISA	C/D	H	45	100	2	A	U	TE			Two active WISA nests were found at this site in 2008. It should be listed as moderate habitat not low.					
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM09	Repeat1		12:15:00 PM	Walk	10	15	1	3	N	B-WISA	C	H	242	100	1	A	U	TE			Rained very hard approximately 20 minutes prior to this survey					
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM14	Repeat1		10:11:00 AM	Walk	5		0	3	N	NULL																
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM16	Repeat1		8:35:00 AM	Walk	10	8	0	4	N	B-WISA	V	S	165	5	1	A	F	FB			Female WISA sighted near CPB point. Did not respond to CPB. Rained very hard the night before.					
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM20	Repeat1		9:23:00 AM	Walk	5		0	4	N	B-WISA	D	H	269	50	1	A	U	TE								
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM23	Repeat1		9:36:00 AM	Walk	2		0	3	N	NULL																
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM25	Repeat1		9:49:00 AM	Walk	1		0	3	N	NULL																
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM47	Repeat1		9:12:00 AM	Road	0		0	4	N	NULL																
Stratified Random CPB	West	RA	28-May-2010	Chris Gill	R10WM48	Repeat1		10:46:00 AM	Walk	10		0	4	N	NULL																
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WL21	First		3:51:00 PM	Road	0		1	4	N	NULL											Could only get to within 20m of this point because it is private property.	PyFdAt	>20	Y	PartCut	
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WL23	First		4:05:00 PM	Walk	2		1	4	N	NULL												PyFd	>20	Y	Matfor/h	
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WL23	Ext		4:11:00 PM							NULL																
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WL34	First		4:27:00 PM	Walk	1	15	1	4	N	NULL												PyFdAt	>20	Y	Matfor/h	
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WL44	Repeat2		10:34:00 AM	Walk	3		3	4	LR	NULL																
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM09	Repeat2		11:14:00 AM	Walk	3		1	4	N	B-WISA	V/D/C	S	287	100	1	A	M	TE								
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM14	Repeat2		9:17:00 AM	Walk	10		1	4	D	B-WISA	V/D/C	S	201	75	1	A	M	TE								
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM16	Repeat2		6:42:00 AM	Walk	15	8	2	4	N	B-WISA	D	H	212	50	1	A	U	TE								
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM20	Repeat2		7:36:00 AM	Walk	5		1	4	N	NULL																
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM20	Ext		7:43:00 AM							B-WISA	V/D/C	S	42	50	1	A	M	TE			Following completion of the repeat visit #2 without a detection I conducted an extended survey. A WISA (unknown sex) responded at Ext#3 at 7:56am.					
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM23	Repeat2		8:15:00 AM	Walk	2		1	4	D	NULL												Following completion of the repeat visit #2 without a detection I conducted an extended survey. A WISA (unknown sex)responded at Ext#3 at 8:34am.				
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM25	Repeat2		8:21:00 AM	Walk			1			B-WISA	C	H	234	150	1	A	U	TE								
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM25	Ext		8:55:00 AM							B-WISA	C	H	123	100	1	A	U	TE			Note: this bird responded at Ext#2 at 8:58AM. At Ext#3 two WISAs (1M, 1F) responded to the CPB.					
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM47	Repeat2		7:20:00 AM	Road	0		1	4	D	NULL																
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WM48	Repeat2		9:53:00 AM	Walk	10		1	4	D	NULL																
Stratified Random CPB	West	RA	31-May-2010	Chris Gill	R10WV57	First		12:52:00 PM	Walk	4		1	4	LR	NULL												AtFd	>20	Y	PartCut	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL32	First		6:54:00 AM	Walk	5	10	1	3	N	NULL											Big clearcut	PyFd	10-20	Y	CCRES	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WM40	First		7:18:00 AM	Walk	5		1	3	N	NULL											Three toed woodpecker	AtFdPy	10-20	Y	Matfor/h	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WM40	Ext		7:23:00 AM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL22	First		7:49:00 AM	Walk	3		1	3	N	NULL												Fd	5-10	N	STCut	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL22	Ext		7:54:00 AM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL39	First		8:30:00 AM	Walk	2		2	3	N	NULL												FdPy	10-20	Y	PartCut	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL39	Ext		8:35:00 AM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL36	First		9:10:00 AM	Walk	4		2	3	N	NULL												FdPy	10-20	Y	Matfor/h	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL36	Ext		9:15:00 AM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL08	First		10:03:00 AM	Walk	7		2	3	N	NULL												FdPy	10-20	Y	PartCut	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL08	Ext		10:08:00 AM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL01	First		10:35:00 AM	Walk	3		1	3	N	NULL												EsFd	10-20	N	PartCut	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL01	Ext		10:41:00 AM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WV19	First		11:44:00 AM	Walk	15		2	3	N	NULL												PIFd	>20	Y	CCRES	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WV19	Ext		11:49:00 AM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WV29	First		12:40:00 PM	Walk	4		1	3	N	NULL												FdAtPy	>20	Y	Matfor	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WV29	Ext		12:45:00 PM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WM24	First		1:04:00 PM	Walk	1		2	3	N	NULL												FdPy	>20	Y	Matfor	
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WM24	Ext		1:09:00 PM							NULL																
Stratified Random CPB	West	RA	1-June-2010	Chris Gill	R10WL49</																										

Appendix 1. Results of the random call playback survey in the Western Region.

Survey Name	Study Area Name	Survey Intensity		Date	Surveyors	CPB Station	Type CPB	Time Start	Type of Access	Time to Walk in	Air Temp (C)	Wind Speed	Cloud Cover	Current Precipitation	Species	WISA V/D/C	Detect Type	Detect Dir (deg)	Detect Dist (m)	Count	Life Stage	Sex	Activity	WISA ID	Final Assigned WISA Site	Comments	Three Tree Species	Main Canopy Ht	Trees >57-cm DBH Present		Habitat Code		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV02	Ext		6:39:00 AM							NULL																		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV34	First		7:03:00 AM	Walk	2		1	4	N	NULL													FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV34	Ext		7:08:00 AM							NULL																		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV60	First		7:37:00 AM	Walk	1		1	4	N	NULL													FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV42	First		8:20:00 AM	Walk	5		1	4	N	NULL													FdPy	10-20	Y	Matfor/h		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WM02	First		8:42:00 AM	Walk	10		1	3	N	NULL													PyFd	>20	Y	PartCut		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WM02	Ext		8:47:00 AM							NULL																		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV01	First		10:34:00 AM	Walk	1		2	3	N	NULL													Py	10-20	Y	OR		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WM57	First		12:26:00 PM	Walk	7		2	4	N	NULL													FdPy	10-20	Y	Matfor/h		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WM57	Ext		12:32:00 PM							NULL																		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WM45	First		12:57:00 PM	Walk	5		2	4	N	NULL													FdPy	10-20	Y	Matfor/h		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WM01	First		1:26:00 PM	Walk	10		2	4	N	B-WISA	V/C	S	161	25	1	A	F	FD					FdPy	10-20	Y	Matfor/h		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV61	First		3:13:00 PM	Walk	5		3	4	N	NULL													PyFd	10-20	Y	PartCut		
Stratified Random CPB	West	RA	2-June-2010	Chris Gill	R10WV16	First		3:34:00 PM	Walk	7	16	3	4	D	NULL													FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WV22	First		7:04:00 AM	Road	0	6	1	3	N	NULL													Py	10-20	Y	PartCut		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WV22	Ext		7:11:00 AM							NULL																		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WM43	First		8:02:00 AM	Walk	1		1	3	N	NULL													PyFd	10-20	Y	Matfor/h		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WM43	Ext		8:07:00 AM							NULL																		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WL17	First		8:34:00 AM	Walk	5		1	4	N	NULL													FdPy	10-20	N	PartCut		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WL17	Ext		8:39:00 AM							NULL																		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WL53	First		9:20:00 AM	Road	0		1	4	N	NULL													FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	3-June-2010	Chris Gill	R10WL53	Ext		9:26:00 AM			15				NULL																		
Stratified Random CPB	West	RA	4-June-2010	Chris Gill	R10WM40	Repeat1		7:31:00 AM			6	1	4	LR	NULL																		
Stratified Random CPB	West	RA	4-June-2010	Chris Gill	R10WL22	Repeat1		7:41:00 AM				1	4	LR	NULL																		
Stratified Random CPB	West	RA	4-June-2010	Chris Gill	R10WL01	Repeat1		7:51:00 AM				1	4	LR	NULL																		
Stratified Random CPB	West	RA	4-June-2010	Chris Gill	R10WL08	Repeat1		8:08:00 AM				1	4	LR	NULL																		
Stratified Random CPB	West	RA	4-June-2010	Chris Gill	R10WL36	Repeat1		8:29:00 AM				1	4	LR	NULL																		
Stratified Random CPB	West	RA	4-June-2010	Chris Gill	R10WM24	Repeat1		8:49:00 AM				1	4	LR	NULL																		
Stratified Random CPB	West	RA	4-June-2010	Chris Gill	R10WV29	Repeat1		8:57:00 AM			9	1	4	LR	NULL																		
Stratified Random CPB	West	RA	7-June-2010	Chris Gill	R10WM40	Repeat2		9:00:00 AM			11	1	3	N	NULL																		
Stratified Random CPB	West	RA	7-June-2010	Chris Gill	R10WL22	Repeat2		9:12:00 AM				1	3	N	NULL																		
Stratified Random CPB	West	RA	7-June-2010	Chris Gill	R10WL01	Repeat2		9:21:00 AM				2	3	N	NULL																		
Stratified Random CPB	West	RA	7-June-2010	Chris Gill	R10WL08	Repeat2		9:40:00 AM				2	3	N	NULL																		
Stratified Random CPB	West	RA	7-June-2010	Chris Gill	R10WL36	Repeat2		10:02:00 AM				2	3	N	NULL																		
Stratified Random CPB	West	RA	7-June-2010	Chris Gill	R10WM24	Repeat2		10:24:00 AM				1	3	N	NULL																		
Stratified Random CPB	West	RA	7-June-2010	Chris Gill	R10WV29	Repeat2		10:32:00 AM			12	1	3	N	NULL																		
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM39	First		6:02:00 AM	Walk	8	5	0	2	N	B-WISA	D	H	55	300	1	A	U	TE					PyFd	5-10	N	PartCut		
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM27	First		6:54:00 AM	Walk	8		0	2	N	NULL														PyFd	10-20	Y	PartCut	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM37	First		8:20:00 AM	Walk	10		1	2	N	NULL														FdPy	10-20	Y	PartCut	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM37	Ext		8:26:00 AM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM35	First		9:06:00 AM	Walk	2		2	2	N	B-WISA	D/V/C	S	80	30	1	A	M	TE					PyAtFd	10-20	Y	Matfor/h		
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM13	First		10:15:00 AM	Walk	5		2	2	N	NULL														PyFdAt	10-20	Y	Matfor/h	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM49	First		10:35:00 AM	Walk	5		3	2	N	NULL														FdPy	5-10	N	Matfor	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM28	First		1:04:00 PM	Walk	20		1	3	N	NULL														FdPy	10-20	Y	Matfor/h	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM28	Ext		1:09:00 PM							NULL																		
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WL10	First		3:23:00 PM	Walk	10		1	4	LR	NULL														FdPy	10-20	Y	PartCut	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM06	First		4:12:00 PM	Walk	5		2	4	N	NULL														FdPy	10-20	N	PartCut	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM22	First		5:02:00 PM	Walk	15		2	4	N	NULL														FdPy	10-20	N	Matfor/h	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM42	First		5:42:00 PM	Walk	2		2	4	D	NULL														AtFdPy	10-20	N	OR	
Stratified Random CPB	West	RA	25-May-2010	Steve Ogle	R10WM38	First		7:15:00 PM	Walk	20	24	2	4	N	NULL														FdPy	10-20	N	Burn	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WV46	First		6:30:00 AM	Walk	15	7	2	4	N	NULL														FdPy	5-10	N	PartCut	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WV37	First		7:10:00 AM	Walk	5		1	4	N	NULL														Fd	10-20	N	PartCut	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WV37	Ext		7:16:00 AM							NULL																		
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WL48	First		8:48:00 AM	Walk	5		2	4	N	NULL														FdPy	10-20	Y	PartCut	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WL16	First		9:49:00 AM	Walk	10		3	3	N	NULL														FdPyAt	10-20	Y	PartCut	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WM32	First		10:24:00 AM	Road	0		3	4	N	NULL																		
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WL20	First		10:42:00 AM	Walk	2		1	4	N	NULL														FdEp	10-20	N	Matfor	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WL33	First		11:11:00 AM	Walk	15		1	4	N	NULL														AtFdPy	>20	Y	Matfor	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WL33	Ext		11:17:00 AM							NULL																		
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WL41	First		12:08:00 PM	Walk	5		3	4	N	NULL														Fd	10-20	N	PartCut	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WM36	First		12:35:00 PM	Walk	10		3	4	LR	NULL														FdPyAt	>20	Y	Matfor	
Stratified Random CPB	West	RA	26-May-2010	Steve Ogle	R10WL11	First		2:31:00 PM	Walk	2	20	0	4	LR	NULL														FdPy	5-10	N	CCRES	
Str																																	

Appendix 1. Results of the random call playback survey in the Western Region.

Survey Name	Study Area Name	Survey Intensity	Date	Surveyors	CPB Station	Type CPB	Time Start	Type of Access	Time to Walk In	Air Temp (C)	Wind Speed	Cloud Cover	Current Precipitation	Species	WISA V/D/C	Detect Type	Detect Dir (deg)	Detect Dist (m)	Count	Life Stage	Sex	Activity	WISA ID	Final Assigned WISA Site	Comments	Three Tree Species	Main Canopy Ht	Trees >57-cm DBH Present	Habitat Code	
Stratified Random CPB	West	RA	27-May-2010	Steve Ogle	R10WV15	First	1:22:00 PM	Walk	5		2	4	N	NULL												AtFdPy	10-20	N	CCRES	
Stratified Random CPB	West	RA	27-May-2010	Steve Ogle	R10WM07	First	1:59:00 PM	Walk	2		2	4	N	NULL												PyAt	10-20	Y	Matfor	
Stratified Random CPB	West	RA	27-May-2010	Steve Ogle	R10WL24	First	2:39:00 PM	Walk	2		2	4	N	NULL												PyFdAt	10-20	N	PartCut	
Stratified Random CPB	West	RA	27-May-2010	Steve Ogle	R10WM18	First	3:29:00 PM	Walk	5	16	1	4	LR	NULL												FdPy	10-20	Y	PartCut	
Stratified Random CPB	West	RA	28-May-2010	Steve Ogle	R10WM39	Repeat1	11:23:00 AM			10	2	3	D	NULL																
Stratified Random CPB	West	RA	28-May-2010	Steve Ogle	R10WM27	Repeat1	11:52:00 AM				2	3	N	NULL																
Stratified Random CPB	West	RA	28-May-2010	Steve Ogle	R10WM13	Repeat1	1:10:00 PM				1	4	LR	NULL																
Stratified Random CPB	West	RA	28-May-2010	Steve Ogle	R10WM35	Repeat1	1:52:00 PM				2	4	N	NULL																
Stratified Random CPB	West	RA	28-May-2010	Steve Ogle	R10WM52	First	2:11:00 PM	Walk	2		2	4	N	B-WISA	V/D	S	70	200	1	A	M	TE			AtFd	>20	Y	Matfor		
Stratified Random CPB	West	RA	28-May-2010	Steve Ogle	R10WL10	Repeat1	3:03:00 PM			24	1	3	N	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM35	Repeat2	5:55:00 AM			5	1	4	N	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM13	Repeat2	6:36:00 AM				1	4	D	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM52	Repeat1	7:21:00 AM				1	4	D	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM27	Repeat2	7:46:00 AM				2	4	D	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM39	Repeat2	8:16:00 AM				1	4	N	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WL10	Repeat2	8:54:00 AM				2	4	D	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WL15	First	9:45:00 AM	Road	0		1	4	LR	NULL										site converted into log sort		0	N	CC		
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM07	Repeat1	10:29:00 AM				1	4	LR	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WL24	Repeat1	10:51:00 AM				2	4	LR	B-WISA	V/C	H	10	200	2	A	MF	TE		Male and female responded						
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM18	Repeat1	12:49:00 PM				2	4	D	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WL16	Repeat1	2:09:00 PM				3	4	N	B-WISA	C	H	100	80	2	A	MF	TE		Male and female called during first minute of point						
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WM32	Repeat1	2:26:00 PM				3	3	N	NULL																
Stratified Random CPB	West	RA	31-May-2010	Steve Ogle	R10WL20	Repeat1	2:37:00 PM			22	2	3	N	NULL																
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WV59	First	6:13:00 AM	Walk	2	8	1	2	N	NULL											Py	5-10	N	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WV55	First	6:54:00 AM	Walk	5		1	2	N	NULL											Fd	10-20	N	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WV56	First	9:44:00 AM	Walk	1		2	3	N	NULL											FdSx	10-20	N	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WV56	Ext	9:49:00 AM							NULL											FdSx	10-20	N	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WM12	First	10:32:00 AM	Walk	2		3	3	N	NULL											FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WM12	Ext	10:38:00 AM							NULL											FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WM04	First	12:35:00 PM	Walk	2		3	4	N	NULL											FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WM04	Ext	12:41:00 PM							NULL											FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WL14	First	1:45:00 PM	Walk	2		3	2	N	NULL											FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WL14	Ext	1:51:00 PM							NULL											FdPy	10-20	Y	PartCut		
Stratified Random CPB	West	RA	01-Jun-2010	Steve Ogle	R10WL43	First	2:50:00 PM	Walk	20		3	2	N	NULL											Fd	10-20	N	PartCut		
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WM52	Repeat2	6:29:00 AM				1	4	D	NULL																
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL26	First	8:04:00 AM	Walk	10		1	3	N	NULL											PyFd	10-20	N	PartCut		
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL26	Ext	8:09:00 AM							NULL											PyFd	10-20	N	PartCut		
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WM07	Repeat2	8:40:00 AM				2	3	N	NULL																
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WM07	Ext	8:46:00 AM							NULL											After second repeat was completed with no birds detected I completed an extended survey. No birds responded.					
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL24	Repeat2	9:18:00 AM				2	4	N	NULL																
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL24	Ext	9:23:00 AM							B-WISA	V/C	S	250	20	1	A	M	TE		After second repeat was completed with no birds detected I completed an extended survey. Male responded at third extended CPB point at 9:31am						
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WM18	Repeat2	10:20:00 AM				2	3	N	B-WISA	C/D/V	S	35	200	1	A	M	TE								
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL57	First	11:26:00 AM	Walk	2		3	4	N	NULL											FdAt	5-10	N	PartCut		
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL57	Ext	11:31:00 AM							NULL											FdAt	5-10	N	PartCut		
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL20	Repeat2	12:24:00 PM				3	4	N	NULL																
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WM32	Repeat2	12:34:00 PM				3	4	N	NULL																
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WL16	Repeat2	1:13:00 PM				3	4	N	B-WISA	C	H	175	170	1	A	M	TE								
Stratified Random CPB	West	RA	02-Jun-2010	Steve Ogle	R10WV62	First	3:04:00 PM	Walk	2		1	4	D	NULL											Py	10-20	N	Burn		
Stratified Random CPB	West	RA	03-Jun-2010	Steve Ogle	R10WM51	First	7:17:00 AM	Walk	15	4	3	3	N	NULL											FdPyAt	10-20	N	MatFor		
Stratified Random CPB	West	RA	03-Jun-2010	Steve Ogle	R10WV41	First	8:09:00 AM	Walk	10		3	3	N	NULL											Fd	10-20	N	ParCut		
Stratified Random CPB	West	RA	03-Jun-2010	Steve Ogle	R10WV33	First	9:02:00 AM	Walk	15		2	2	N	NULL											FdSx	10-20	N	ParCut		
Stratified Random CPB	West	RA	03-Jun-2010	Steve Ogle	R10WM41	First	9:34:00 AM	Walk	10		4	2	N	NULL											FdPy	5-10	Y	MatFor		
Stratified Random CPB	West	RA	03-Jun-2010	Steve Ogle	R10WM41	Ext	9:39:00 AM				</																			