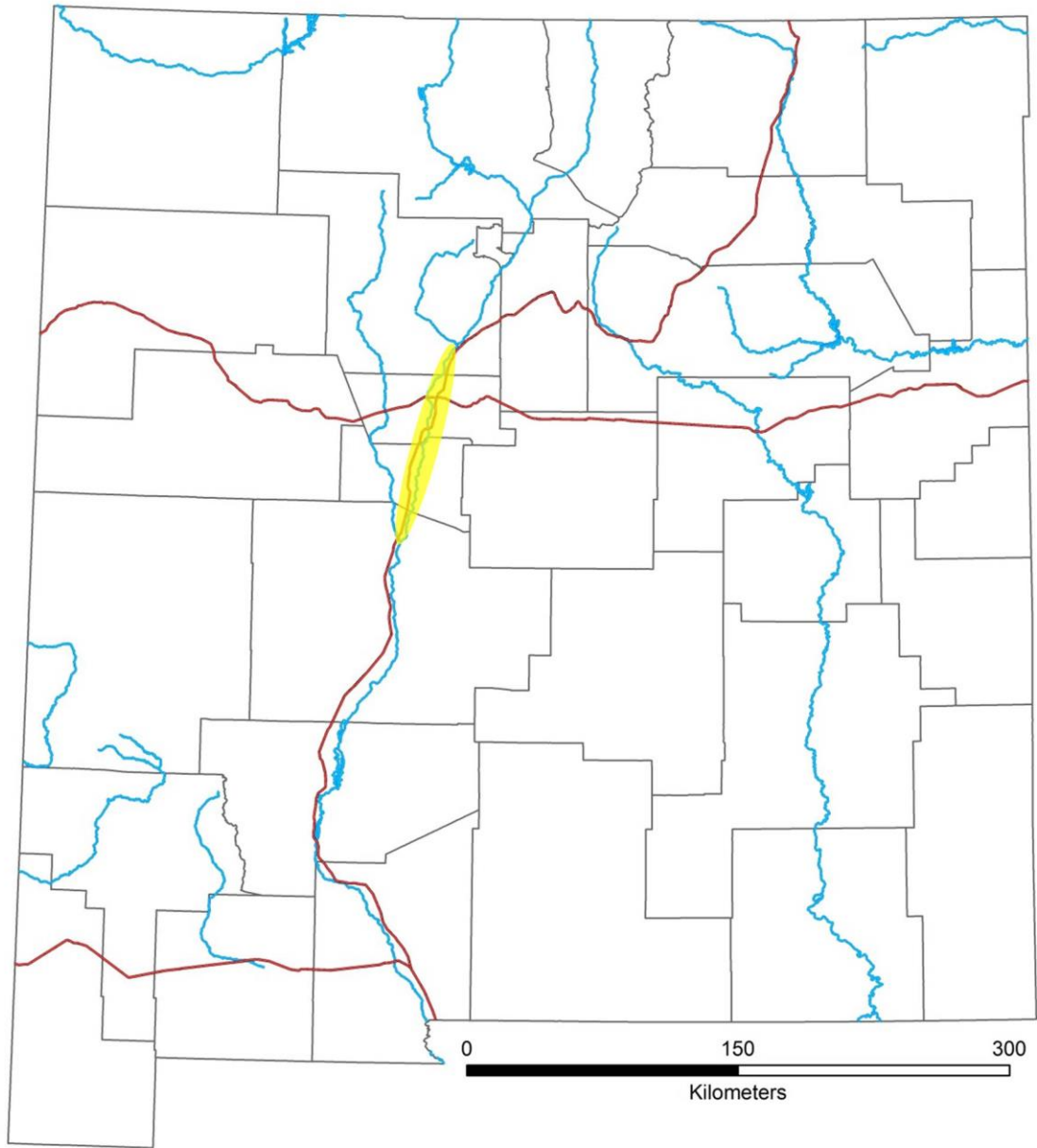


Avian Response to Restoration Efforts in the Middle Rio Grande Bosque: Wetland Creation and Potential Impacts of Restoration Activity on the Avian Community

Trevor Fetz





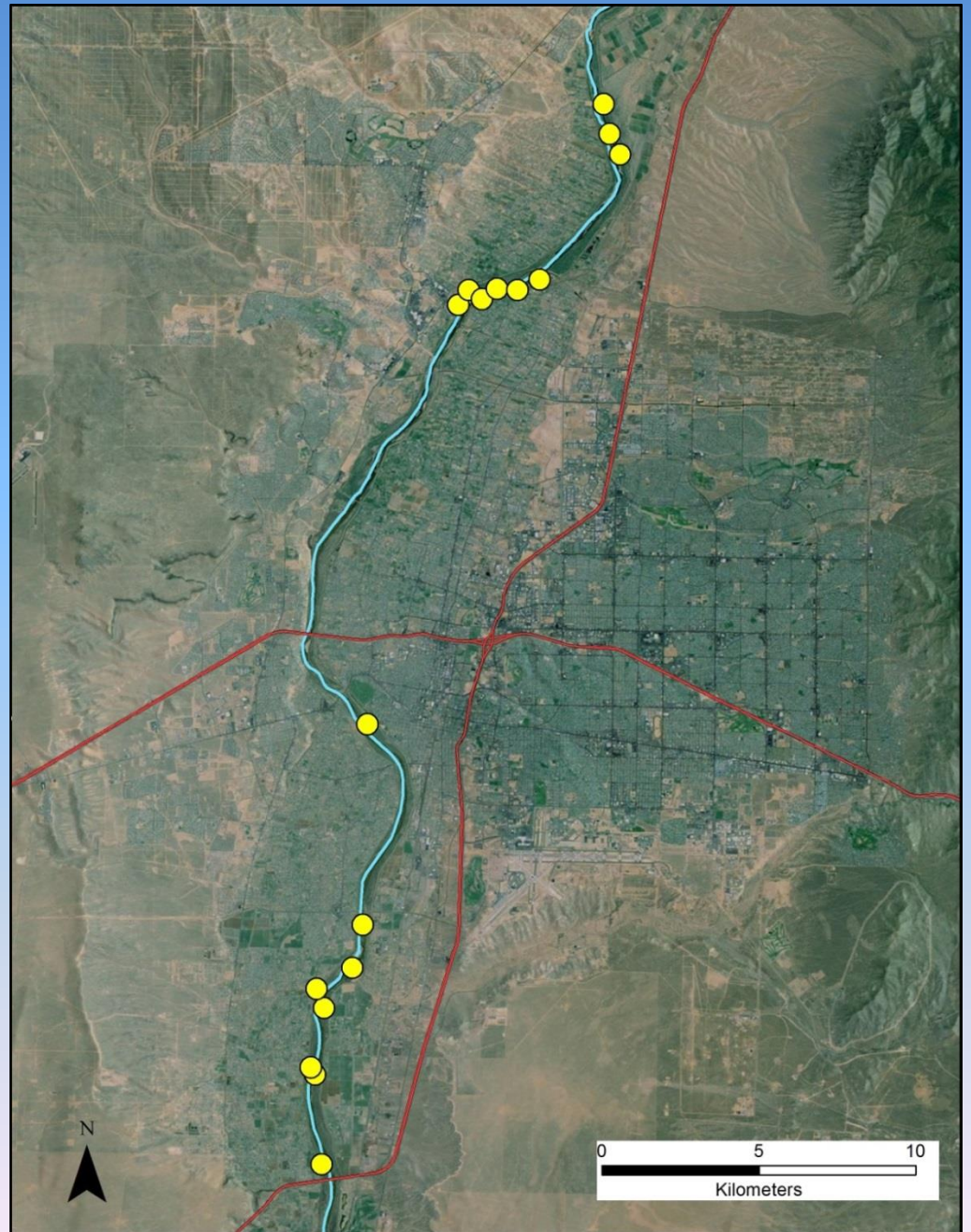
Songbird Project Background

- **Avian walking transect surveys began in winter 2004**
- **78 transects between Rio Rancho and La Joya, NM**
- **Survey protocol based on Middle Rio Grande Biological Survey (Hink and Ohmart 1984)**
- **Habitat classifications based on Hink and Ohmart community and structure (C/S) types**

Songbird Survey Methods

- **Transects surveyed 3 times/month (9 times/season)**
- **Seasons: Summer (June-August), Winter (December-February)**
- **Avian density and richness based on detections w/in 30 m of transect line**

USACE Restoration Areas



Tingley Ponds/Marsh



Tingley: Summer 2004



Tingley: Pond Construction 10/05



Tingley: Ponds (2012)



Tingley: Marsh (2012)



Tingley Summer Data

Habitat	Year	Birds/100 Acres	Richness	SE
OW-MH	2012	899	51	77.5
OW-MH	2011	946	51	95.4
OW-MH	2010	1062	46	119.4
OW-MH	2009	1010	54	122.6
OW-MH	2008	899	43	51.4
OW-MH	2007	907	46	62.2
OW-MH	2006	924	39	108.1
C-2 ART	2005	446	29	51.0
C/MB 1	2004	515	29	69.4

Who Benefits During Summer?



Tingley Winter Data

Habitat	Year	Birds/100 Acres	Richness	SE
OW-MH	2012	1720	41	340.6
OW-MH	2011	1705	37	325.6
OW-MH	2010	1587	33	192.6
OW-MH	2009	2055	32	274.2
OW-MH	2008	1244	33	324.2
OW-MH	2007	526	31	100.4
OW/C-2 ART	2006	191	13	18.2
C-2 ART	2005	56	8	18.6

Who Benefits During Winter?



Recent Restoration Projects

- Construction mostly since 2011
- 14 avian transects and 3 WIFL routes
- Creation of swales/bank terracing in areas of potential inundation (*Salix* sp., *Populus deltoides*)
- Plantings in upland areas (*Forestiera neomexicana*, *Shepherdia argentea*, etc.)

Willow Swale (Pre-Construction)



Willow Swale Construction (1/12)



Willow Swale (7/13)



Willow Swale (Projection)



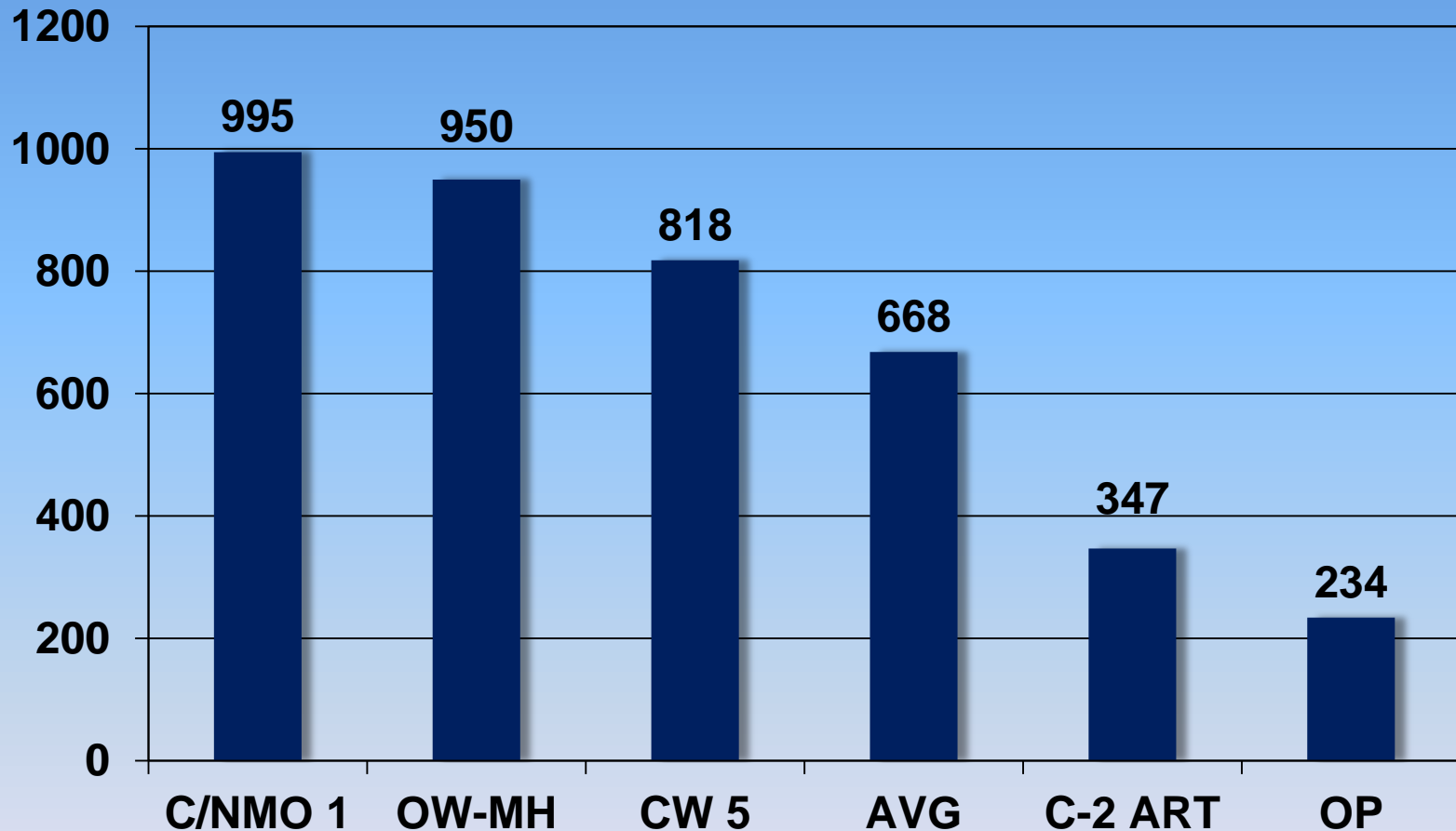
Upland Restoration (Pre)



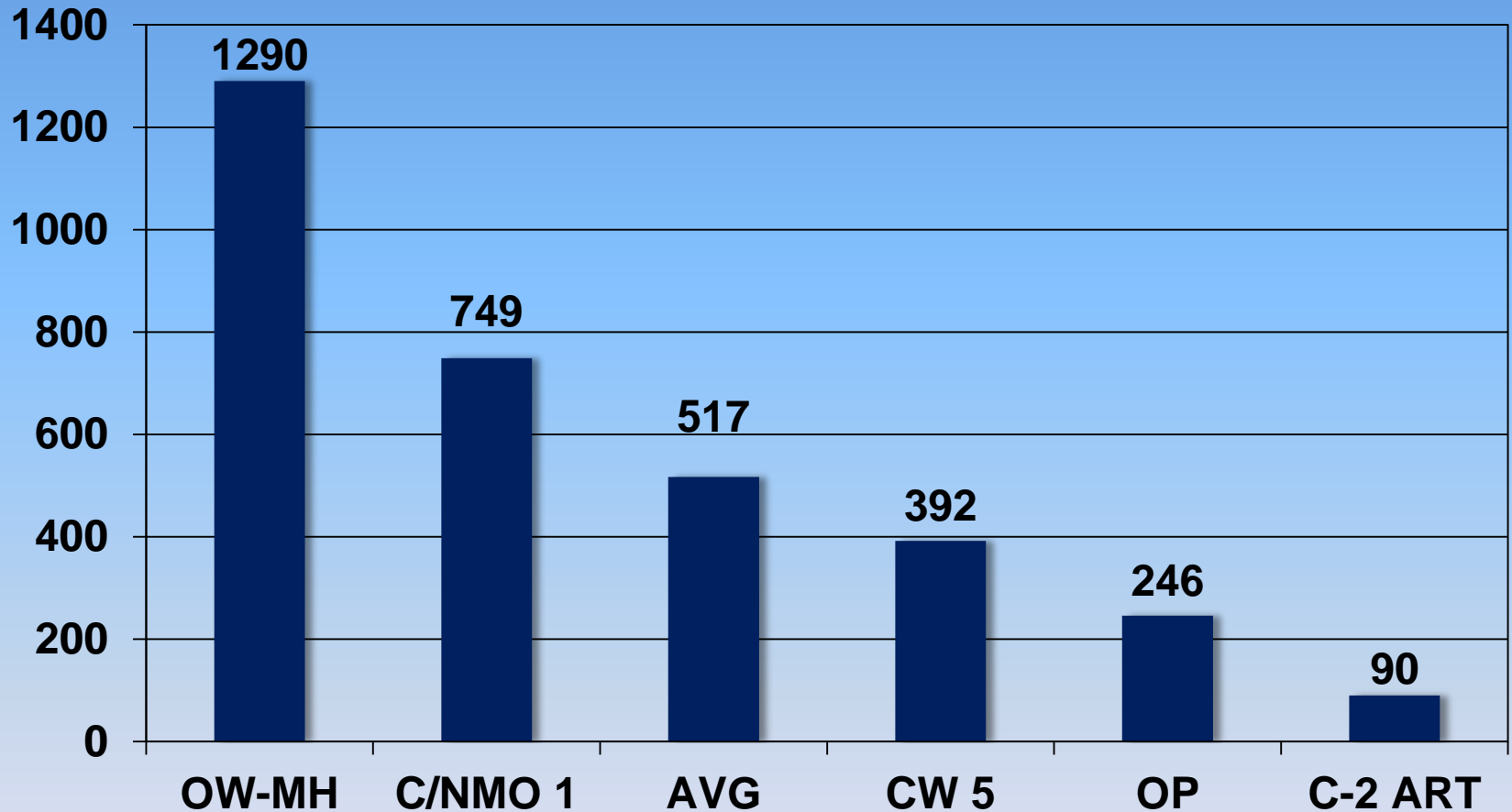
Upland Restoration (Projection)



Summer Avian Density 2004-2012



Winter Avian Density 2004-2012



Willow Flycatcher Surveys

- **Southwestern subspecies (*E.t. extimus*) endangered**
- **Follows FWS protocol**
- **Added 3 sites in USCE restoration areas since 2010**



FWS Photo – D. Hill

Brown Burn WIFL

- Site of 2003 fire
- Willow swales, oxbow created
- WIFL migration stopover habitat
- High avian use



Brown Burn (2005)

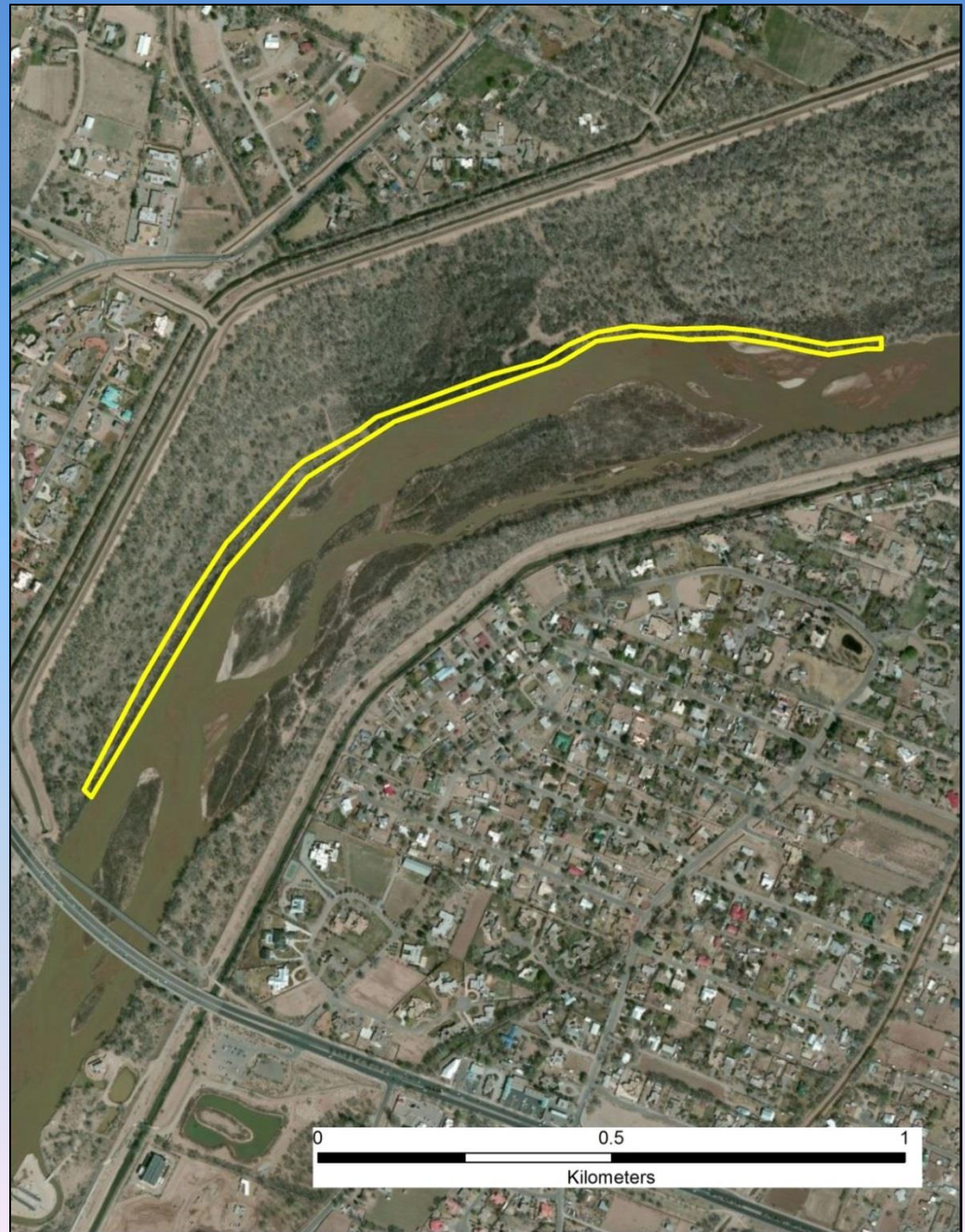


Brown Burn (2013)



South Corrales WIFL

- Bank terracing, willow swale creation
- WIFL stopover habitat
- Potential WIFL breeding habitat



South Corrales (2011)



South Corrales (2013)



Restoration Area WIFL Detections

Site	Period	2010	2011	2012	2013
Brown Burn	1	0	1	0	1
Brown Burn	2	1	0	0	1
Brown Burn	3	0	0	0	0
Durand Outfall	1	-	0	0	0
Durand Outfall	2	-	0	0	0
Durand Outfall	3	-	0	0	0
South Corrales	1	-	1	0	13
South Corrales	2	-	0	0	2
South Corrales	3	-	0	0	0

Conclusions

- **Increased avian density and richness throughout year at Tingley (projected for other areas)**
- **Provides habitat lacking throughout MRG, increasing the presence of relative rare species**
- **Creation of WIFL migration stopover areas, potential WIFL breeding habitat**

Acknowledgements

Funder:

- **USACE**
- **Ondrea Hummel
(USACE)**

Bird Photos:

- **Doug Brown**

