

2002 Bird Banding Report for Amistad National Recreation Area

By

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Introduction

The purpose of this report is to present a summary of birds captured during migratory and breeding bird banding at two locations within Amistad National Recreation Area during 2002 (figure 1). This report presents a brief background on each banding location and a summary of the information obtained from the field.



Figure 1. Location of Amistad National Recreation Area in Texas.

Bird Banding

The purpose of bird banding through constant-effort mist netting is to provide baseline resource data on the presence of migratory and breeding birds and determine the importance of managed lands within Amistad National Recreation Area for providing migratory and resident bird habitat. With baseline information gained through this study, park management can protect these habitats for migratory and resident bird species.

Banding Locations

Constant-effort mist netting occurred on May 8, 9, 10, 2002 at the Pecos River and on October 5, 2002. The Pecos River migration station is located in southwest Val Verde County, Texas. UTM location for this site is E (271,582) and N (3,288,158). Latitude is (29,42,09) and Longitude is (101,21,39). See figure 2 and 3 for location maps. The Pecos River is one of the three primary river systems found within Amistad NRA.

Constant-effort mist netting occurred on July 11 and 12, 2002 at Satan Canyon. Satan Canyon bird banding station is located in southwest Val Verde County, Texas. UTM location for this site is E (310,431) and N (3,283,027). Latitude is (29,39,45) and Longitude is (100,57,30). See figure 2 and 4 for location map. Satan Canyon is a tributary of the Devils River, located in the northern region of Amistad NRA.



Figure 2. Bird banding overview showing locations for the Pecos River and Satan Canyon banding during 2002, Amistad NRA.

The Pecos River banding station occurs along the riparian edge of the Pecos River. This habitat type can be considered ephemeral since a rise in the reservoir could inundate the area. The area has been dry since 1993, and has been colonized by willow (*Salix spp.*) and salt cedar (*Tamarix spp.*) which dominates the vegetation canopy with a few areas where river cane (*Arundo donax*) and huisache (*Acacia farnesiana*) form clumps. The understory is occupied by bermuda grass and a few infrequent forbs and native grasses. Roosevelt weed (*Baccharis neglecta*) is found to grow in dense vegetation belts along the river edge. During the banding operations in 2002, the Pecos River was restricted to a narrow incised channel. The

non-inundation zone of the survey area was a minimum of 150 meters from the canyon wall to the rivers edge.



Figure 3. Pecos River bird banding location during 2002, Amistad NRA.

Satan Canyon contains a plateau live oak (*Quercus fusiformis*), honey mesquite (*Prosopis glandulosa*), and huisache (*Acacia farnesiana*) dominate vegetation canopy with an understory represented by mountain laurel (*Sophora secundiflora*), blackbrush (*Acacia rigidula*), guayacan (*Guaiacum angustifolium*) and prickly pear cactus (*Opuntia spp.*). Grasses and forbs are common in the understory of the site. The habitat is characterized by large plateau live oak motts surrounded by lower shrub habitat and reservoir inundation zone.

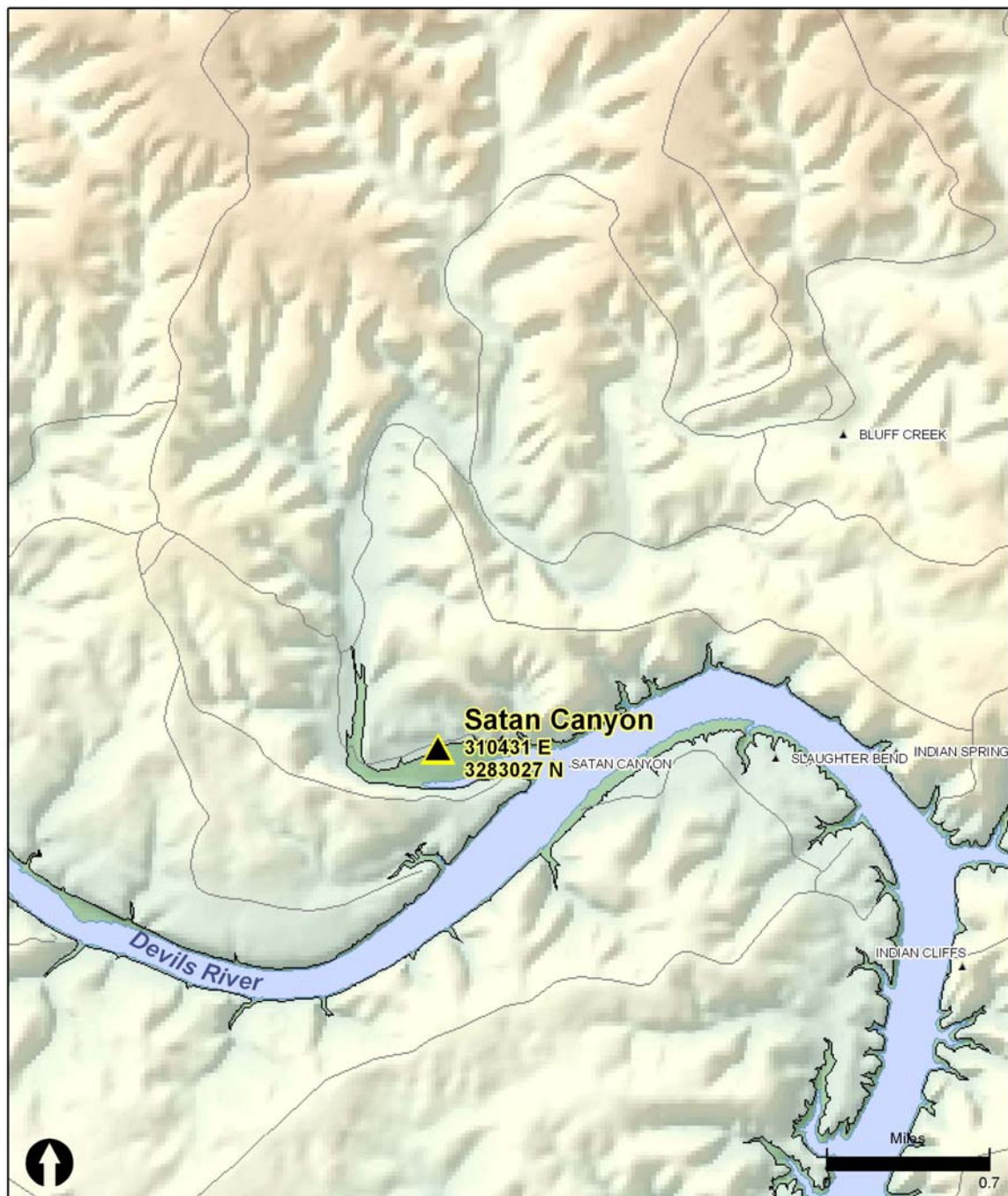


Figure 4. Satan Canyon bird banding location during 2002, Amistad NRA.

Methods

Seven 12-meter long by 2.6 meter high (40 feet by 8.5 feet) with four shelves and 30mm (1.2 in) mesh mist nets were placed at the Pecos River migration station on May 8, 2002. The nets were opened at 1845 p.m. and closed at 2045 p.m., 2 hours of operation. On May 9, 2002, nine mist nets were operated from 0615 a.m. to 1130 a.m., 5.25 hours of operation. Six mist nets were re-opened from 1845 p.m. to 2045 p.m., 2 hours of operation. On May 10, 2002, nine nets were opened from 0615 a.m. to 0915 a.m. From 0915 a.m. to 1115 a.m., seven nets remained opened. Nets were placed facing vegetation edges along the Pecos River drainage. Net locations were chosen to be in areas of high use by birds, areas where nets could blend with

the vegetation, and be out of direct sunlight to the greatest extent possible. Temporary metal stakes and poles were used to place nets. One GPS location was taken in the center of the station.

Ten 12-meter long mist nets were placed at the Satan Canyon banding station on July 11, 2002. The nets were opened at 0700 a.m. and closed at 1300 p.m., 6 hours of operation. On July 12, 2002, ten nets were opened at 0700 a.m. and closed at 1200 p.m., 5 hours of operation. Nets were placed along the access road, under the canopy of large oaks and along the edges of huisaches and mesquite. Temporary metal stakes and poles were used to place nets. One GPS location was taken in the center of the station.

Twelve 12-meter long mist nets were placed at the Pecos River banding station on October 5, 2002. The nets were opened at 0700 a.m. and closed at 1230 p.m., 5.5 hours of operation.

Closure of nets during the above project dates were based primarily on high temperatures, exposure to the sun, and threats to birds. Closures also occurred if there were low capture rates experienced, usually during the second day of operations.

David Larson, Natural Resources Program Manager, operated the four stations, Master Banding permit holder (#22946, U.S. Fish and Wildlife Service) during year 2002. Assistance was received from Whitney Howeth (Amistad NRA Bio-tech) and Gavin Emmons (Carlsbad Caverns NP, Biologist).

Results

The following information is a summary of the data obtained at the two stations. Tables 1 through 8 provide species and number of birds captured at the above described stations.

Number of bird species captured at the Pecos River on May 8 was 7 species. Total number of birds banded was 13 (table1). On this date, one female Black-chinned Hummingbird (*Archilochus alexandri*) was captured and released without being banded. Other birds observed in the area included Blue Grosbeak (*Passerina caerulea*), Brown-headed Cowbird (*Molothrus ater*), and Red-winged Blackbird (*Agelaius phoeniceus*).

Table 1. Species and number of birds captured at the Pecos River, May 8, 2002.

CODE	SPECIES	Number, Year 2002
BCHU	Black-chinned Hummingbird	1*
CANW	Canyon Wren	1
COYE	Common Yellowthroat	1
INDO	Inca Dove	1
OROR	Orchard Oriole	6
YBCH	Yellow-breasted Chat	2
YEWA	Yellow Warbler	2
* Birds not banded.		

Number of species captured at the Pecos River on May 9, from 0615 to 1130 was 20 species. Total number of birds captured was 98 (table 2).

Birds observed in the banding area of the Pecos River on May 9 included Great Blue Heron (*Ardea herodias*), White-winged Dove (*Zenaida asiatica*), Morning Dove (*Zenaida macroura*), Northern Rough-winged Swallow (*Stelgidopteryx serripennis*), Cliff Swallow (*Petrochelidon pyrrhonota*), Say's Phoebe (*Sayornis saya*), Bell's Vireo (*Vireo bellii*), White-eyed Vireo (*Vireo griseus*) and Bronzed Cowbird (*Molothrus aeneus*).

Birds that were captured but unbanded included Red-winged Blackbird (3 unbanded), Orchard Oriole (*Icterus spurius*)(3 unbanded), Carolina Wren (*Thryothorus ludovicianus*)(1 unbanded), Great-tailed Grackle(*Quiscalus mexicanus*)(1 unbanded), Bell's Vireo (1 unbanded), and Blue Grosbeak (1 unbanded). On May 9, at 1030, Canyon Wren (*Catherpes mexicanus*)(1771-04987), Recapture, died from heat stress.

Table 2. Species and number of birds captured at the Pecos River, May 9, from 0615 - 1130.

CODE	SPECIES	Number, Year 2002
BAWW	Black-and-white Warbler	1, (+)
BEVI	Bell's Vireo	2
BLGR	Blue Grosbeak	4
CARW	Carolina Wren	2
CCSP	Clay-colored Sparrow	1
COGD	Common Ground-Dove	2
COYE	Common Yellowthroat	13
LBWO	Ladder-backed Woodpecker	1
LISP	Lincoln's Sparrow	3
MGWA	MacGillivray's Warbler	4
NAWA	Nashville Warbler	1
NOCA	Northern Cardinal	1
OLSP	Olive Sparrow	1, (+)
OROR	Orchard Oriole	19
PABU	Painted Bunting	6
RWBL	Red-winged Blackbird	12
SUTA	Summer Tanager	1
WIWA	Wilson's Warbler	1
YBCH	Yellow-breasted Chat	14
YEWA	Yellow Warbler	9
(+) Bird's photo vouchered.		

Number of species captured at the Pecos River on May 9, from 1845 to 2045 was 9 species. Total number of birds captured was 16 (table 3).

Table 3. Species and number of birds captured at the Pecos River on May 9, 2002, 1845 - 2045.

CODE	SPECIES	Number, Year 2002
BLGR	Blue Grosbeak	3
COGD	Common Ground-Dove	1
COYE	Common Yellowthroat	4
NAWA	Nashville Warbler	1
OROR	Orchard Oriole	3
PABU	Painted Bunting	1
RWBL	Red-winged Blackbird	1
SUTA	Summer Tanager	1
WEWA	Worm-eating Warbler	1, (+)
(+) Birds photo vouchered.		

Number of species captured at the Pecos River on May 10, from 0615 to 0915 was 11 species. Total number of birds captured was 31 (table 4).

Birds observed in the banding area of the Pecos River on May 10 included Chihuahuan Raven (*Corvus cryptoleucus*), Say's Phoebe (*Sayornis saya*), Ash-throated Flycatcher (*Myiarchus cinerascens*), Groove-billed Ani (*Crotophaga sulcirostris*) (1, observed moving through banding station), Black-crested Titmouse (*Baeolophus atricristatus*), and Yellow-billed Cuckoo (*Coccyzus americanus*).

Birds that were captured but unbanded included Black-chinned Hummingbird (2 females, 1 male), Great-tailed Grackle (1 female), Orchard Oriole (2), Yellow-breasted Chat (1), Lincoln's Sparrow (1), and Red-winged Blackbird (1).

Table 4. Species and number of birds captured at the Pecos River, May 10, 0615 – 0915.

CODE	SPECIES	Number, Year 2002
BEVI	Bell's Vireo	1
CARW	Carolina Wren	1
COYE	Common Yellowthroat	4
NOCA	Northern Cardinal	1
OROR	Orchard Oriole	2
PABU	Painted Bunting	3
RWBL	Red-winged Blackbird	4
WIWR	Winter Wren	1, (+)
WEVI	White-eyed Vireo	1
YBCH	Yellow-breasted Chat	8
YEWA	Yellow Warbler	5
(+) Birds photo vouchered.		

Number of species captured at the Pecos River on May 10, from 0915 to 1115 was 6 species. Total number of birds captured was 6 (table 5).

On May 10, at 1000 a.m., Common Yellowthroat (0118-08974) was predated on by Great-tailed Grackle while captured in a mist net.

Table 5. Species and number of birds captured at the Pecos River on May 10, 2002, 0915 - 1115.

CODE	SPECIES	Number, Year 2002
CCSP	Clay-colored Sparrow	1
COYE	Common Yellowthroat	1
LISP	Lincoln's Sparrow	1
MAWA	MagGillivray's Warbler	1
PABU	Painted Bunting	1
YBCH	Yellow-breasted Chat	1

Number of species captured at Satan Canyon on July 11, 2002 was 18 species (table 6). Total number of birds captured was 60 birds, which includes 5 recaptures.

On this date, Turkey Vulture (*Cathartes aura*), Black Vulture (*Coragyps atratus*), Red-tailed Hawk (*Buteo jamaicensis*), Canyon Wren (*Catherpes mexicanus*), Rufous-crowned Sparrow (*Aimophila ruficeps*), Yellow-billed Cuckoo (*Coccyzus americanus*), Orchard Oriole (*Icterus spurius*) and Morning Dove (*Zenaida macroura*) were observed in the area of the banding station.

Table 6. Species and number of birds captured at Satan Canyon, July 11, 2002.

CODE	SPECIES	Number, Year 2002
ATFL	Ash-throated Flycatcher	2
BCTI	Black-crested Titmouse	2, (+)
BEVI	Bell's Vireo	10, 1 Recapture
BEWR	Bewick's Wren	7, 2 Recapture
BHCO	Brown-headed Cowbird	1
BROC	Bronzed Cowbird	1, (+)
BTGN	Black-tailed Gnatcatcher	1, (+)
BTSP	Black-throated Sparrow	1, (+)
COGD	Common Ground-Dove	2
HOFI	House Finch	1
NOCA	Northern Cardinal	4, 1 Recapture
NOMO	Northern Mockingbird	4
PABU	Painted Bunting	7, (+)
PYRR	Pyrrhuloxia	2, (+)
SUTA	Summer Tanager	2, (+)
WEVI	White-eyed Vireo	2, 1 Recapture
VERD	Verdin	1, (+)
YBCH	Yellow-breasted Chat	5
* Birds not banded. (+) Bird's photo vouchered.		

Number of species captured at Satan Canyon on July 12, 2002 was 13 species (table 7). Total number of birds captured was 67 birds, which includes 2 recaptures.

On this date, Scott's Oriole (*Icterus parisorum*), Easter Screech-Owl (*Otus asio*), Common Poorwill (*Phalaenoptilus nuttallii*), Wild Turkey (*Meleagris gallopavo*), Canyon Wren (*Catherpes mexicanus*), Morning Dove (*Zenaida macroura*) and Yellow-billed Cuckoo (*Coccyzus americanus*) were observed in the area of the banding station.

Table 7. Species and number of birds captured at Satan Canyon, July 12, 2002.

CODE	SPECIES	Number, Year 2002
BEVI	Bell's Vireo	10, 1 Recapture
BEWR	Bewick's Wren	11
BROC	Bronzed Cowbird	1, (+)
CACW	Cactus Wren	2
COGD	Common Ground-Dove	1
GFWO	Golden-fronted Woodpecker	2, (+)
HOFI	House Finch	1, (+)
LBWO	Ladder-backed Woodpecker	1
NOCA	Northern Cardinal	10
NOMO	Northern Mockingbird	7
PABU	Painted Bunting	13
WEVI	White-eyed Vireo	3, 1 Recapture
YBCH	Yellow-breasted Chat	3
* Birds not banded. (+) Bird's photo vouchered.		

Number of species captured at the Pecos River banding station on October 5, 2002 was 15 species (table 8). Total number of birds captured was 34 birds, including two recaptures.

Birds observed during the banding operation on October 5, 2002 included White-winged Dove (*Zenaida asiatica*), Common Poorwill (*Phalaenoptilus nuttallii*), Belted Kingfisher (*Ceryle alcyon*), Northern Flicker (*Colaptes auratus*), Blue-gray Gnatcatcher (*Poliophtila caerulea*), and Blue Grosbeak (*Passerina caerulea*).

Table 8. Species and number of birds captured at the Pecos River, October 5, 2002.

CODE	SPECIES	Number, Year 2002
CANW	Canyon Wren	1
CCSP	Clay-colored Sparrow	4
COGD	Common Ground-Dove	2 Recaptures
COYE	Common Yellowthroat	4
LEFL	Least Flycatcher	1
LISP	Lincoln's Sparrow	2
MAWR	Marsh Wren	1, (+)
NAWA	Nashville Warbler	1
NOCA	Northern Cardinal	2
OCWA	Orange-crowned Warbler	4
RCKI	Ruby-crowned Kinglet	1
RCSP	Rufous-crowned Sparrow	1
VESP	Vesper Sparrow	1
WEVI	White-eyed Vireo	1
WIWA	Wilson's Warbler	7
YBCH	Yellow-breasted Chat	3
(+) Bird's photo vouchered.		

Discussion

Bird banding at the Pecos River during May 8-10, proved to be very productive in respect to the wide array of migratory and summer breeding birds encountered. Migratory warblers encountered included Yellow Warbler (*Dendroica petechia*), Black-and-white Warbler (*Mniotilta varia*), MacGillivray's Warbler (*Oporornis tolmiei*), Nashville Warbler (*Vermivora ruficapilla*), Wilson's Warbler (*Wilsonia pusilla*) and Worm-eating Warbler (*Helmitheros vermivorus*). Other migratory species included Clay-colored Sparrow (*Spizella pallida*), Lincoln's Sparrow (*Melospiza lincolni*), and Winter Wren (*Troglodytes troglodytes*). Common Yellowthroat (*Geothlypis trichas*), Red-winged Blackbird (*Agelaius phoeniceus*), and Orchard Oriole (*Icterus spurius*) were found to be very common summer residents. The presence of Carolina Wren (*Thryothorus ludovicianus*) as a summer breeder at the banding station was noteworthy. The observation of a Groove-billed Ani (*Crotophaga sulcirostris*) confirmed the presence and possible breeding of this species on the Pecos River.

A survey of the summer resident birds at Satan Canyon during July 11-12, confirmed the presence of a number of species. Bell's Vireo (*Vireo bellii*), Bewick's Wren (*Thryomanes bewickii*), Northern Cardinal (*Cardinalis cardinalis*), Painted Bunting (*Passerina ciris*), White-eyed Vireo (*Vireo griseus*) and Yellow-breasted Chat (*Icteria virens*) were found to be common species encountered. Golden-fronted Woodpecker (*Melanerpes aurifrons*), Black-tailed Gnatcatcher (*Poliophtila melanura*), Black-crested Titmouse (*Baeolophus atricristatus*), and Pyrrhuloxia (*Cardinalis sinuatus*) were confirmed summer residents. The observation of an Eastern Screech-Owl (*Otus asio*) was confirmed. This bird vocalized frequently before sunrise, suggesting resident breeder. The observation of a Scott's Oriole (*Icterus parisorum*) is noteworthy due to this species limited range in central Texas.

Bird banding at the Pecos River on October 5, confirmed a number of fall migratory species using this river corridor as a migration route. Migratory species included Clay-colored Sparrow (*Spizella pallida*), Least Flycatcher (*Empidonax minimus*), Lincoln's Sparrow (*Melospiza lincolni*), Nashville Warbler (*Vermivora ruficapilla*), Orange-crowned Warbler (*Vermivora celata*), and Wilson's Warbler (*Wilsonia pusilla*). Winter residents included Ruby-crowned Kinglet (*Regulus calendula*) and Marsh Wren (*Cistothorus palustris*).

Management Recommendations

Bird banding results on the Pecos River demonstrate that this main river system should be considered very important as a bird migratory corridor. It appears with the wide array of bird species encountered, that this area of the park can be recognized as a good destination site for recreational birders. The large willow trees and developed vegetation along the Pecos River can be considered ephemeral. If the reservoir comes up in the future, this banding station will be inundated. The current developed forest of willow has created a very important habitat for birds, although it may be ephemeral in nature. The park should consider the vegetated habitats that occur along the Pecos River as very important for protecting the resident and migratory bird species found in the area.

Satan Canyon is currently found in a state of vegetation regeneration. Visitor use in the area has been restricted since the start of the 1993 draught. Reservoir water levels have been low since 1993, restricting motor boat access to the entrance of Satan Canyon. There is an estimated 15 old campsites and fire rings under the oak motts, found on the west end of the station. It is recommended that visitor access and use of this area be managed to prevent vegetation loss and negative impacts on the oak motts. If livestock grazing becomes active again in the area, a fencing project could be initiated to prevent heavy grazing pressures on the oak motts. Regeneration of oaks in the area is very rare. Controls should be put in place to prevent further degradation of this rare park resource.

David Hays, GIS specialist for Amistad NRA, created all the figures displayed in this report.
Cover photo is of a Worm-eating Warbler, banded on 5/9/02, at the Pecos River
(Photo by Gavin Emmons).

Appendix 1: Original bird banding data for 2002 at AMISPECO (Pecos River) and AMISSACA (Satan Canyon), Amistad NRA.

Amistad National Recreation Area											
Year 2002 Bird Migration and Breeding Data											
Bander: David Larson. Natural Resources Program Manager											
bandnumb	spcd	aou	yr	mo	day	sex	age	location	wing	tail	notes
1180-08974	COYE	6810	2002	5	8	4	1	AMISPECO	55		killed in net by GTGR
1202-40809	INDO	3210	2002	5	8	0	1	AMISPECO			
1791-54802	OROR	5060	2002	5	8	5	1	AMISPECO	70		
1791-54803	OROR	5060	2002	5	8	4	6	AMISPECO	75		
1711-35497	OROR	5060	2002	5	8	4	5	AMISPECO	77	71	culmen=15 mm
1711-35498	OROR	5060	2002	5	8	4	5	AMISPECO	73	65	culmen=15 mm
1711-35499	OROR	5060	2002	5	8	4	5	AMISPECO	76		
1711-35500	OROR	5060	2002	5	8	5	1	AMISPECO	69		
1771-04987	PABU	6010	2002	5	8	5	1	AMISPECO	65		Mortality from heat
1781-68907	YBCH	6830	2002	5	8	4	5	AMISPECO	76	82	culmen=14 mm
1781-68908	YBCH	6830	2002	5	8	5	1	AMISPECO	75		
1180-08975	YWAR	6520	2002	5	8	4	1	AMISPECO	62		
1180-08976	YWAR	6520	2002	5	8	4	1	AMISPECO	62		
1180-08997	BAWW	6360	2002	5	9	4	6	AMISPECO	65		
1180-08981	BEVI	6330	2002	5	9	4	1	AMISPECO	54		
1180-08994	BEVI	6330	2002	5	9	0	1	AMISPECO	55		
1791-54804	BLGR	5970	2002	5	9	4	6	AMISPECO	86		
1791-54805	BLGR	5970	2002	5	9	4	5	AMISPECO			
1791-54815	BLGR	5970	2002	5	9	4	6	AMISPECO	70		
1791-54818	BLGR	5970	2002	5	9	4	6	AMISPECO	89		
1791-54830	BLGR	5970	2002	5	9	4	5	AMISPECO	82		
1791-54832	BLGR	5970	2002	5	9	5	1	AMISPECO	81		
1791-54835	BLGR	5970	2002	5	9	4	6	AMISPECO	91		
1791-54819	CARW	7180	2002	5	9	0	1	AMISPECO	59		
1791-54827	CARW	7180	2002	5	9	0	1	AMISPECO	62		
1180-08998	CCSP	5610	2002	5	9	0	1	AMISPECO	55		
1202-40814	COGD	3200	2002	5	9	4	5	AMISPECO	83		
1202-40818	COGD	3200	2002	5	9	4	1	AMISPECO	83		
1202-40819	COGD	3200	2002	5	9	4	1	AMISPECO	90		
1180-08978	COYE	6810	2002	5	9	4	6	AMISPECO	57		
1180-08979	COYE	6810	2002	5	9	5	5	AMISPECO	53		
1180-08982	COYE	6810	2002	5	9	4	6	AMISPECO	54		
1180-08983	COYE	6810	2002	5	9	4	1	AMISPECO	55		
1180-08985	COYE	6810	2002	5	9	5	5	AMISPECO	52		
1180-08986	COYE	6810	2002	5	9	0	2	AMISPECO	57		
1180-08987	COYE	6810	2002	5	9	5	1	AMISPECO	54		
1180-08989	COYE	6810	2002	5	9	4	1	AMISPECO	55		
1180-08992	COYE	6810	2002	5	9	4	1	AMISPECO	59		
1180-08993	COYE	6810	2002	5	9	4	1	AMISPECO	56		
1180-08996	COYE	6810	2002	5	9	5	1	AMISPECO	52		
2200-95401	COYE	6810	2002	5	9	4	1	AMISPECO	58		
2200-95403	COYE	6810	2002	5	9	5	1	AMISPECO	52		
2200-95404	COYE	6810	2002	5	9	4	1	AMISPECO	60		

Appendix 1 Continued.

bandnumb	spcd	aou	yr	mo	day	sex	age	location	wing	tail	notes
2200-95405	COYE	6810	2002	5	9	4	1	AMISPECO	56		
2200-95406	COYE	6810	2002	5	9	4	1	AMISPECO	56		
2200-95407	COYE	6810	2002	5	9	5	1	AMISPECO	58		
1781-68909	LBWO	3960	2002	5	9	5	1	AMISPECO	99		
1771-04988	LISP	5830	2002	5	9	0	1	AMISPECO	64		
1771-04994	LISP	5830	2002	5	9	0	1	AMISPECO	61		
1771-04996	LISP	5830	2002	5	9	0	1	AMISPECO	62		
1771-04998	MAWR	7250	2002	5	9	5	1	AMISPECO	58		
1771-04991	MGWA	6800	2002	5	9	5	1	AMISPECO	69		
1771-04993	MGWA	6800	2002	5	9	0	1	AMISPECO	53		
1771-04997	MGWA	6800	2002	5	9	5	1	AMISPECO	55		
2130-57269	NAWA	6450	2002	5	9	5	1	AMISPECO	60		
2130-57270	NAWA	6450	2002	5	9	5	1	AMISPECO	55		
1202-40816	NOCA	5930	2002	5	9	5	1	AMISPECO	87		
1791-54812	OLSP	5860	2002	5	9	4	1	AMISPECO	65		
1791-54806	OROR	5060	2002	5	9	5	5	AMISPECO	73		
1791-54807	OROR	5060	2002	5	9	4	5	AMISPECO	71		
1791-54808	OROR	5060	2002	5	9	4	5	AMISPECO	73		
1791-54809	OROR	5060	2002	5	9	4	5	AMISPECO	77		
1791-54810	OROR	5060	2002	5	9	4	6	AMISPECO	74		
1791-54811	OROR	5060	2002	5	9	5	1	AMISPECO	72		
1791-54813	OROR	5060	2002	5	9	4	6	AMISPECO	75		
1791-54814	OROR	5060	2002	5	9	5	1	AMISPECO	69		
1791-54816	OROR	5060	2002	5	9	4	6	AMISPECO	76		
1791-54817	OROR	5060	2002	5	9	4	6	AMISPECO	75		
1791-54820	OROR	5060	2002	5	9	5	1	AMISPECO	71		
1791-54821	OROR	5060	2002	5	9	5	1	AMISPECO	69		
1791-54822	OROR	5060	2002	5	9	4	5	AMISPECO	72		
1791-54823	OROR	5060	2002	5	9	5	1	AMISPECO	69		
1791-54824	OROR	5060	2002	5	9	5	1	AMISPECO	72		
1791-54825	OROR	5060	2002	5	9	5	1	AMISPECO	72		
1791-54826	OROR	5060	2002	5	9	5	1	AMISPECO	69		
1791-54828	OROR	5060	2002	5	9	4	5	AMISPECO	75		
1791-54829	OROR	5060	2002	5	9	5	1	AMISPECO	69		
1791-54831	OROR	5060	2002	5	9	5	1	AMISPECO	73		
1791-54833	OROR	5060	2002	5	9	4	6	AMISPECO	70		
1791-54834	OROR	5060	2002	5	9	5	1	AMISPECO	70		
1771-04989	PABU	6010	2002	5	9	5	1	AMISPECO	65		
1771-04990	PABU	6010	2002	5	9	5	1	AMISPECO	65		
1771-04992	PABU	6010	2002	5	9	4	6	AMISPECO	70		
1771-04995	PABU	6010	2002	5	9	0	5	AMISPECO	53		
1771-04999	PABU	6010	2002	5	9	5	1	AMISPECO	68		
1771-05000	PABU	6010	2002	5	9	5	1	AMISPECO	67		
2011-39102	PABU	6010	2002	5	9	4	6	AMISPECO	70		
1781-68910	RWBL	4980	2002	5	9	5	1	AMISPECO	95		
1781-68911	RWBL	4980	2002	5	9	5	1	AMISPECO	95		
1781-68912	RWBL	4980	2002	5	9	5	1	AMISPECO	95		

Appendix 1 Continued.

bandnumb	spcd	aou	yr	mo	day	sex	age	location	wing	tail	notes
1781-68913	RWBL	4980	2002	5	9	5	1	AMISPECO	100		
1781-68914	RWBL	4980	2002	5	9	5	1	AMISPECO	96		
1781-68915	RWBL	4980	2002	5	9	5	1	AMISPECO	95		
1781-68931	RWBL	4980	2002	5	9	5	1	AMISPECO	99		
1202-40810	RWBL	4980	2002	5	9	4	6	AMISPECO	119		
1202-40811	RWBL	4980	2002	5	9	4	1	AMISPECO	113		
1202-40812	RWBL	4980	2002	5	9	4	5	AMISPECO	110		
1202-40813	RWBL	4980	2002	5	9	4	5	AMISPECO	115		
1202-40815	RWBL	4980	2002	5	9	4	5	AMISPECO	114		
1202-40817	RWBL	4980	2002	5	9	4	5	AMISPECO	111		
1781-68927	SUTA	6100	2002	5	9	4	6	AMISPECO	99		
1781-68932	SUTA	6100	2002	5	9	5	1	AMISPECO	89		
2011-39101	WEWA	6390	2002	5	9	0	1	AMISPECO	66		
1180-08988	WIWA	6850	2002	5	9	5	5	AMISPECO	52		No cap
1781-68916	YBCH	6830	2002	5	9	5	1	AMISPECO	77		
1781-68917	YBCH	6830	2002	5	9	5	5	AMISPECO	70		
1781-68918	YBCH	6830	2002	5	9	4	1	AMISPECO	77		
1781-68919	YBCH	6830	2002	5	9	4	1	AMISPECO	77		
1781-68920	YBCH	6830	2002	5	9	4	1	AMISPECO	75		
1781-68921	YBCH	6830	2002	5	9	4	5	AMISPECO	72		
1781-68922	YBCH	6830	2002	5	9	4	1	AMISPECO	77		
1781-68923	YBCH	6830	2002	5	9	5	1	AMISPECO	79		
1781-68924	YBCH	6830	2002	5	9	5	5	AMISPECO	75		
1781-68925	YBCH	6830	2002	5	9	4	1	AMISPECO	74		
1781-68926	YBCH	6830	2002	5	9	4	1	AMISPECO	70		
1781-68928	YBCH	6830	2002	5	9	4	5	AMISPECO	75		
1781-68929	YBCH	6830	2002	5	9	5	5	AMISPECO	74		
1781-68930	YBCH	6830	2002	5	9	4	1	AMISPECO	74		
1180-08977	YWAR	6520	2002	5	9	4	6	AMISPECO	62		
1180-08980	YWAR	6520	2002	5	9	4	6	AMISPECO	65		
1180-08984	YWAR	6520	2002	5	9	5	1	AMISPECO	60		
1180-08990	YWAR	6520	2002	5	9	5	1	AMISPECO	55		
1180-08991	YWAR	6520	2002	5	9	5	1	AMISPECO	58		
1180-08995	YWAR	6520	2002	5	9	5	1	AMISPECO	60		
1180-08999	YWAR	6520	2002	5	9	4	1	AMISPECO	60		
1180-09000	YWAR	6520	2002	5	9	5	1	AMISPECO	56		
2200-95402	YWAR	6520	2002	5	9	5	1	AMISPECO	56		
2200-95409	BEVI	6330	2002	5	10	4	1	AMISPECO	55		
1791-54837	CARW	7180	2002	5	10	0	1	AMISPECO	61		
2200-95420	CCSP	5610	2002	5	10	0	1	AMISPECO	60		
2200-95412	COYE	6810	2002	5	10	4	5	AMISPECO	54		
2200-95415	COYE	6810	2002	5	10	5	1	AMISPECO	59		
2200-95416	COYE	6810	2002	5	10	4	1	AMISPECO	54		
2200-95419	COYE	6810	2002	5	10	5	1	AMISPECO	51		
2011-39107	LISP	5830	2002	5	10	0	1	AMISPECO	60		
2011-39105	MGWA	6800	2002	5	10	5	1	AMISPECO	58		
1202-40822	NOCA	5930	2002	5	10	4	1	AMISPECO	92		

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bandnumb	spcd	aou	yr	mo	day	sex	age	location	wing	tail	notes
1791-54836	OROR	5060	2002	5	10	4	5	AMISPECO	75		
1791-54838	OROR	5060	2002	5	10	4	5	AMISPECO	76		
2011-39103	PABU	6010	2002	5	10	5	1	AMISPECO	68		
2011-39104	PABU	6010	2002	5	10	0	5	AMISPECO	68		
2011-39106	PABU	6010	2002	5	10	5	1	AMISPECO	66		
1781-68933	RWBL	4980	2002	5	10	5	1	AMISPECO	99		
1781-68940	RWBL	4980	2002	5	10	5	1	AMISPECO	94		
1202-40820	RWBL	4980	2002	5	10	4	5	AMISPECO	113		
1202-40821	RWBL	4980	2002	5	10	4	5	AMISPECO	113		
2200-95418	WEVI	6310	2002	5	10	5	5	AMISPECO	55		Brood Patch
2200-95417	WIWR	7220	2002	5	10	0	1	AMISPECO	44		
1781-68934	YBCH	6830	2002	5	10	4	6	AMISPECO	76		
1781-68935	YBCH	6830	2002	5	10	5	1	AMISPECO	72		
1781-68936	YBCH	6830	2002	5	10	4	6	AMISPECO	77		
1781-68937	YBCH	6830	2002	5	10	4	1	AMISPECO	75		
1781-68938	YBCH	6830	2002	5	10	4	6	AMISPECO	77		
1781-68939	YBCH	6830	2002	5	10	5	1	AMISPECO	75		
1781-68941	YBCH	6830	2002	5	10	5	5	AMISPECO	77		
1781-68942	YBCH	6830	2002	5	10	4	1	AMISPECO	78		
1781-68943	YBCH	6830	2002	5	10	5	1	AMISPECO	75		
2200-95408	YWAR	6520	2002	5	10	4	6	AMISPECO	60		
2200-95410	YWAR	6520	2002	5	10	5	1	AMISPECO	56		
2200-95411	YWAR	6520	2002	5	10	4	1	AMISPECO	60		
2200-95413	YWAR	6520	2002	5	10	4	1	AMISPECO	59		
2200-95414	YWAR	6520	2002	5	10	5	1	AMISPECO	60		
1791-54869	ATFL	4540	2002	7	11	5	1	AMISSACA	105		
1791-54870	ATFL	4540	2002	7	11	0	5	AMISSACA	102		
1791-54867	BCTI	7320	2002	7	11	0	2	AMISSACA	74		
1791-54871	BCTI	7320	2002	7	11	5	1	AMISSACA	70		
0118-08918	BEVI	6330	2002	7	11	4	1	AMISSACA			Recapture
2200-95450	BEVI	6330	2002	7	11	5	1	AMISSACA	54		
2200-95451	BEVI	6330	2002	7	11	4	1	AMISSACA	54		
2200-95454	BEVI	6330	2002	7	11	0	2	AMISSACA	53		
2200-95455	BEVI	6330	2002	7	11	0	2	AMISSACA	54		
2200-95456	BEVI	6330	2002	7	11	0	2	AMISSACA	53		
2200-95457	BEVI	6330	2002	7	11	0	1	AMISSACA	52		
2200-95458	BEVI	6330	2002	7	11	5	1	AMISSACA	53		
2200-95459	BEVI	6330	2002	7	11	5	1	AMISSACA	54		
2200-95460	BEVI	6330	2002	7	11	5	1	AMISSACA	53		
2200-95461	BEVI	6330	2002	7	11	0	1	AMISSACA	53		
1691-67258	BEWR	7190	2002	7	11	4	1	AMISSACA			Recapture
2011-39147	BEWR	7190	2002	7	11	5	1	AMISSACA			Recapture
2011-39147	BEWR	7190	2002	7	11	0	2	AMISSACA	53		
2011-39148	BEWR	7190	2002	7	11	0	2	AMISSACA	54		
2011-39150	BEWR	7190	2002	7	11	0	1	AMISSACA	56		
2011-39158	BEWR	7190	2002	7	11	0	2	AMISSACA	53		
2011-39159	BEWR	7190	2002	7	11	0	2	AMISSACA	55		

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bandnumb	spcd	aou	yr	mo	day	sex	age	location	wing	tail	notes
2011-39160	BEWR	7190	2002	7	11	0	1	AMISSACA	55		
2011-39161	BEWR	7190	2002	7	11	5	1	AMISSACA	52		
1781-68990	BHCO	4950	2002	7	11	0	2	AMISSACA	77		
1202-40864	BROC	4960	2002	7	11	4	1	AMISSACA	116		
2130-57274	BTGN	7520	2002	7	11	5	1	AMISSACA			
2011-39152	BTSP	5730	2002	7	11	4	1	AMISSACA	54		
1202-40861	COGD	3200	2002	7	11	5	1	AMISSACA	87		
1202-40863	COGD	3200	2002	7	11	0	2	AMISSACA	77		
1791-54868	HOFI	5190	2002	7	11	4	1	AMISSACA	76		
0832-77056	NOCA	5930	2002	7	11	4	1	AMISSACA			Recapture
1202-40865	NOCA	5930	2002	7	11	4	1	AMISSACA	89		
1202-40867	NOCA	5930	2002	7	11	4	1	AMISSACA	92		
1202-40870	NOCA	5930	2002	7	11	5	2	AMISSACA	83		
1202-40871	NOCA	5930	2002	7	11	5	1	AMISSACA	90		
1202-40862	NOMO	7030	2002	7	11	5	1	AMISSACA	109		
1202-40866	NOMO	7030	2002	7	11	5	1	AMISSACA	103		
1202-40868	NOMO	7030	2002	7	11	5	1	AMISSACA	101		
1202-40869	NOMO	7030	2002	7	11	0	2	AMISSACA	107		
2011-39149	PABU	6010	2002	7	11	4	6	AMISSACA	71		
2011-39151	PABU	6010	2002	7	11	5	6	AMISSACA	67		
2011-39153	PABU	6010	2002	7	11	0	2	AMISSACA	67		
2011-39154	PABU	6010	2002	7	11	4	6	AMISSACA	72		
2011-39155	PABU	6010	2002	7	11	0	2	AMISSACA	67		
2011-39156	PABU	6010	2002	7	11	0	2	AMISSACA	42		
2011-39157	PABU	6010	2002	7	11	5	1	AMISSACA	67		
1781-68995	PYRR	5940	2002	7	11	4	1	AMISSACA	90		
1781-68996	PYRR	5940	2002	7	11	4	1	AMISSACA	89		
1781-68989	SUTA	6100	2002	7	11	5	1	AMISSACA	90		
1781-68993	SUTA	6100	2002	7	11	4	5	AMISSACA	95		
2130-57273	VERD	7460	2002	7	11	4	1	AMISSACA	53		
0118-08653	WEVI	6310	2002	7	11	5	1	AMISSACA			Recapture
2200-95452	WEVI	6310	2002	7	11	0	2	AMISSACA			
2200-95453	WEVI	6310	2002	7	11	4	1	AMISSACA	59		
1781-68988	YBCH	6830	2002	7	11	0	2	AMISSACA	70		
1781-68991	YBCH	6830	2002	7	11	4	5	AMISSACA	76		
1781-68992	YBCH	6830	2002	7	11	4	6	AMISSACA	77		
1781-68994	YBCH	6830	2002	7	11	0	2	AMISSACA	72		
1781-68997	YBCH	6830	2002	7	11	5	6	AMISSACA	75		
0118-08654	BEVI	6330	2002	7	12	0	1	AMISSACA			Recapture
2200-95462	BEVI	6330	2002	7	12	0	1	AMISSACA	51		
2200-95463	BEVI	6330	2002	7	12	0	2	AMISSACA	54		
2200-95464	BEVI	6330	2002	7	12	0	2	AMISSACA	53		
2200-95465	BEVI	6330	2002	7	12	0	2	AMISSACA	51		
2200-95466	BEVI	6330	2002	7	12	0	2	AMISSACA	52		
2200-95467	BEVI	6330	2002	7	12	0	1	AMISSACA	53		
2200-95468	BEVI	6330	2002	7	12	5	1	AMISSACA	52		
2200-95469	BEVI	6330	2002	7	12	5	1	AMISSACA	53		

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bandnumb	spcd	aou	yr	mo	day	sex	age	location	wing	tail	notes
2200-95472	BEVI	6330	2002	7	12	5	1	AMISSACA	54		
2200-95473	BEVI	6330	2002	7	12	0	2	AMISSACA	52		
2011-39163	BEWR	7190	2002	7	12	0	2	AMISSACA	53		
2011-39167	BEWR	7190	2002	7	12	5	1	AMISSACA			
2011-39168	BEWR	7190	2002	7	12	0	2	AMISSACA			
2011-39169	BEWR	7190	2002	7	12	4	1	AMISSACA	55		
2011-39170	BEWR	7190	2002	7	12	0	1	AMISSACA	51		
2011-39173	BEWR	7190	2002	7	12	0	2	AMISSACA	53		
2011-39180	BEWR	7190	2002	7	12	0	1	AMISSACA	55		
2011-39181	BEWR	7190	2002	7	12	0	2	AMISSACA	51		
2011-39184	BEWR	7190	2002	7	12	0	2	AMISSACA	53		
2011-39185	BEWR	7190	2002	7	12	0	2	AMISSACA	49		
1202-40875	BROC	4960	2002	7	12	5	1	AMISSACA	103		
1781-68998	CACW	7130	2002	7	12	4	1	AMISSACA	85		
1801-09701	CACW	7130	2002	7	12	5	1	AMISSACA	75		
1202-40886	COGD	3200	2002	7	12	5	2	AMISSACA	85		
1202-40885	GFWO	4100	2002	7	12	4	1	AMISSACA	131		
1202-40891	GFWO	4100	2002	7	12	5	1	AMISSACA	126		
1791-54872	HOFI	5190	2002	7	12	5	1	AMISSACA	79		
1781-68999	LBWO	3960	2002	7	12	4	2	AMISSACA	102		
1202-40872	NOCA	5930	2002	7	12	4	1	AMISSACA	89		
1202-40874	NOCA	5930	2002	7	12	4	1	AMISSACA	90		
1202-40878	NOCA	5930	2002	7	12	5	1	AMISSACA	90		
1202-40879	NOCA	5930	2002	7	12	5	2	AMISSACA	85		
1202-40881	NOCA	5930	2002	7	12	4	2	AMISSACA	82		
1202-40883	NOCA	5930	2002	7	12	4	2	AMISSACA	85		
1202-40887	NOCA	5930	2002	7	12	4	2	AMISSACA	88		
1202-40889	NOCA	5930	2002	7	12	5	2	AMISSACA	87		
1202-40890	NOCA	5930	2002	7	12	5	2	AMISSACA	81		
1202-40892	NOCA	5930	2002	7	12	5	2	AMISSACA	85		
1202-40873	NOMO	7030	2002	7	12	5	1	AMISSACA	106		
1202-40876	NOMO	7030	2002	7	12	4	1	AMISSACA	111		
1202-40877	NOMO	7030	2002	7	12	4	1	AMISSACA	111		
1202-40880	NOMO	7030	2002	7	12	0	2	AMISSACA	104		
1202-40882	NOMO	7030	2002	7	12	4	1	AMISSACA	117		
1202-40884	NOMO	7030	2002	7	12	4	1	AMISSACA	105		
1202-40888	NOMO	7030	2002	7	12	0	2	AMISSACA	107		
2011-39162	PABU	6010	2002	7	12	5	6	AMISSACA	66		
2011-39164	PABU	6010	2002	7	12	0	2	AMISSACA	65		
2011-39165	PABU	6010	2002	7	12	0	2	AMISSACA	65		
2011-39166	PABU	6010	2002	7	12	0	2	AMISSACA	64		
2011-39171	PABU	6010	2002	7	12	4	5	AMISSACA	69		
2011-39172	PABU	6010	2002	7	12	4	5	AMISSACA	73		
2011-39174	PABU	6010	2002	7	12	0	2	AMISSACA	68		
2011-39175	PABU	6010	2002	7	12	0	2	AMISSACA	68		
2011-39176	PABU	6010	2002	7	12	5	6	AMISSACA	65		
2011-39177	PABU	6010	2002	7	12	5	1	AMISSACA	67		

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bandnumb	spcd	aou	yr	mo	day	sex	age	location	wing	tail	notes
2011-39178	PABU	6010	2002	7	12	0	2	AMISSACA	68		
2011-39179	PABU	6010	2002	7	12	4	6	AMISSACA	75		
2011-39183	PABU	6010	2002	7	12	0	2	AMISSACA	65		
2200-95453	WEVI	6310	2002	7	12	4	1	AMISSACA			Recapture
2200-95470	WEVI	6310	2002	7	12	0	2	AMISSACA	55		
2200-95471	WEVI	6310	2002	7	12	0	2	AMISSACA	56		
2200-95474	WEVI	6310	2002	7	12	4	1	AMISSACA	56		
1781-69000	YBCH	6830	2002	7	12	4	6	AMISSACA	75		
1801-09702	YBCH	6830	2002	7	12	0	2	AMISSACA	70		
1801-09703	YBCH	6830	2002	7	12	4	5	AMISSACA	75		
2011-39200	CANW	7170	2002	10	5	0	1	AMISPECO	60		
2200-95484	CCSP	5610	2002	10	5	0	1	AMISPECO	64		
2200-95487	CCSP	5610	2002	10	5	0	1	AMISPECO	60		
2200-95490	CCSP	5610	2002	10	5	0	1	AMISPECO	62		
2200-95493	CCSP	5610	2002	10	5	0	1	AMISPECO	60		
1202-40819	COGD	3200	2002	10	5	4	1	AMISPECO	92		Recapture
1202-40814	COGD	3200	2002	10	5	5	1	AMISPECO	85		Recapture
2200-95482	COYE	6810	2002	10	5	4	1	AMISPECO	60		
2200-95483	COYE	6810	2002	10	5	4	1	AMISPECO	57		
2200-95486	COYE	6810	2002	10	5	4	2	AMISPECO	53		
2200-95488	COYE	6810	2002	10	5	4	1	AMISPECO	57		
2200-95494	LEFL	4670	2002	10	5	0	1	AMISPECO	62	51	culmen = 6mm. Bill width = 5
2111-67701	LISP	5830	2002	10	5	0	1	AMISPECO	59		
2111-67704	LISP	5830	2002	10	5	0	1	AMISPECO	58		
2111-67703	MAWR	7250	2002	10	5	0	1	AMISPECO	50		
2130-57280	NAWA	6450	2002	10	5	5	1	AMISPECO	59		crown = 3mm.
1202-85514	NOCA	5930	2002	10	5	5	1	AMISPECO	88		
1202-85515	NOCA	5930	2002	10	5	4	1	AMISPECO	96		
2200-95485	OCWA	6460	2002	10	5	5	1	AMISPECO	57		crown = 5 mm.
2200-95491	OCWA	6460	2002	10	5	4	1	AMISPECO	61		crown = 14mm.
2200-95492	OCWA	6460	2002	10	5	5	1	AMISPECO	58		no crown.
2200-95495	OCWA	6460	2002	10	5	4	1	AMISPECO	63		crown = 14mm.
2130-57277	RCKI	7490	2002	10	5	5	1	AMISPECO	60		
2111-67702	RCSP	5800	2002	10	5	0	2	AMISPECO	57		
1791-54878	VESP	5400	2002	10	5	0	1	AMISPECO	81		
2200-95489	WEVI	6310	2002	10	5	0	1	AMISPECO	59		
2130-57275	WIWA	6850	2002	10	5	5	1	AMISPECO	54		
2130-57276	WIWA	6850	2002	10	5	5	1	AMISPECO	55		
2130-57278	WIWA	6850	2002	10	5	5	1	AMISPECO	57		crown = 13mm
2130-57279	WIWA	6850	2002	10	5	5	2	AMISPECO	55		crown absent
2130-57281	WIWA	6850	2002	10	5	0	1	AMISPECO	57		crown = 15mm, broken crown.
2130-57282	WIWA	6850	2002	10	5	4	1	AMISPECO	56		crown = 16 mm.
2130-57283	WIWA	6850	2002	10	5	4	1	AMISPECO	57		crown = 17mm.
1801-09722	YBCH	6830	2002	10	5	5	1	AMISPECO	76		