Work Task C1: Brown-Headed Cowbird Trap Assessment

FY06 Estimates	FY06 Actual	Cumulative Accomplishment Through FY06	FY07 Approved Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate	FY10 Proposed Estimate
$85,000	$73,525	$125,989	$0	$0	$0	$0

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Start Date: FY05

Expected Duration: Closed in FY06

Long-term Goal: Species research to evaluate brown-headed cowbird (BHCO) control program.

Conservation Measures: MRM4

Location: Alamo Lake State Wildlife Area (SWA), Bill Williams River NWR, AZ

Purpose: Assess the effectiveness of BHCO trapping on the productivity and nest success of southwestern willow flycatcher (SWFL) and other neotropical birds.

Connections with Other Work Tasks (past and future): This study provides information necessary for managing created habitats proposed under work tasks outlined in Section E that target covered species susceptible to BHCO parasitism. This work task was completed in FY06. Additional BHCO trapping studies are being conducted at SWFL life history study sites under D2.

Project Description: Control of BHCO may become necessary to reduce parasitism rates for covered species, especially SWFL. The USFWS issued an SIA BO in 2001, which calls for initiation of a BHCO trapping program under Reasonable and Prudent Measure 5 (RPM 5) if:

1. Nest monitoring of SWFL nests found between Parker and Imperial Dams shows a 40% or greater parasitism rate in any one year or averages more than 20% in any two or more consecutive years.
2. No nesting SWFL can be detected at occupied sites due to poor sub-population stability.

In addition, the LCR MSCP states that research must be conducted to determine and address the effects of BHCO parasitism on reproduction of covered species. To effectively and efficiently conduct BHCO control, trapping effectiveness needs to be determined. Post-trap monitoring will be conducted until BHCO population numbers and parasitism rates reach pre-trap numbers. These data will enable Reclamation to determine potential BHCO trapping intervals to protect LCR MSCP covered species.

Previous Activities: From 1998 to 2001, Reclamation implemented a BHCO control program in accordance with the 1997 BO. The BHCO traps were placed at Alamo Lake SWA, Bill Williams River NWR, and Havasu NWR (1998 only). Trapping was suspended after the 2001 breeding season and post-trap monitoring was implemented in 2002 to measure the effectiveness of the control program and to determine when BHCO populations, parasitism rates, and host nest success reached pre-trap levels. Data obtained will help determine trapping interval for future BHCO control programs.

FY06 Accomplishments: Point counts were conducted at Alamo Lake SWA and Bill Williams River NWR to record density of BHCO and passerine species susceptible to BHCO parasitism. Monitoring nests of passerine species susceptible to BHCO parasitism, including the SWFL, was conducted throughout the breeding season. At Alamo Lake SWA, resident mean BHCO detection rates increased from 0.01 (2001) to 0.35 (2005) BHCO per point at Brown's Crossing and 0.01 (2001) to 0.38 (2006) at the Santa Maria River (Figure 6). However, due to damage caused by flooding, surveys were not conducted at Brown's Crossing in 2006.

At the Bill Williams River NWR, resident mean BHCO detection rates ranged from 0.06 (1999) to 0.38 (2006) BHCO per point. Unlike at Alamo Lake, BHCO detections actually increased during the trapping years from the first year of trapping. This increase continued into the post-trapping years, except for a decline in BHCO abundance in 2003. Finally, BHCO abundance increased to its highest level in 2006.

For Alamo Lake SWA during the study years, combined parasitism rates for Abert's towhee (ABTO), Arizona Bell's vireo (BEVI), yellow-breasted chat (YBCH), and SWFL ranged from 1% in 2001 to a high of 17% in 2004, with an increasing trend after the termination of the BHCO control program. The rate in 2006 was 15%, which is the second highest rate recorded during the study. Predation rates also increased during the post-trapping years.

For Bill Williams River NWR, parasitism rates for all species was zero during the 1999-2001 BHCO trapping years with an increasing trend after the termination of the BHCO control program. The combined rates for ABTO, BEVI, YBCH, and SWFL were 10% in 2002, 20% in 2003, 21% in 2004, 15% in 2005, and 16% in 2006. Nest predation also increased after 2001 from zero to 21% during the post-trapping years.

Study results indicate that BHCO control can reduce BHCO abundance and, consequently, parasitism rates on a local level. Impacts are dependent on isolation from BHCO population centers, agricultural areas, and migration corridors, such as the LCR. The BHCO populations at Alamo Lake and Brown's Crossing did not reach pre-trap levels until 5 and 6 years after trapping ceased, respectively. Parasitism rates for host species did not reach pre-trap levels until 3 years after trapping ceased. Trapping of BHCO can be considered as an option if parasitism is the primary threat to an individual species at a specific site. However, other threats, such as predation and habitat degradation, may be limiting host species populations at many sites. Landscape factors may also limit the effectiveness of BHCO control, including habitat patch size and proximity to BHCO population sources and migration corridors. These results will be used to evaluate potential management actions at existing and created habitats. If BHCO control is necessary at specific sites along the LCR, trapping intervals may extend between 3 and 6 years, depending on landscape factors.

FY07 Activities: Project Closed

Proposed FY08 Activities: None

Pertinent Reports: *Results of Brown-headed Cowbird Control Program Monitoring 1999-2006 Final Report* will be posted on the LCR MSCP Web site.