

Wildlife Disease Response Program

Sonny Bono Salton Sea National
Wildlife Refuge
Calipatria, CA

Background

- Salton Sea Refuge established in 1930, providing habitat for migratory birds
- Long history of botulism at the Sea
- Historically @ 40,000 acres, but currently @ 2,000 acres
- Although Sea is not refuge, Refuge has assumed responsibility for migratory bird resources on the Sea

Disease Outbreak Totals					
	1997	1998	1999	2000	2001
Overall Total	6518	13125	3074	9801	1119
Botulism	735	69	691	594	265
Cholera	1218	10776	2383	8834	852

Botulism and Pelicans

- Refuge reports pre-1996 do not identify a problem with botulism in pelicans
- In 1996, large-scale die-off occurs, primarily affecting American White Pelicans and smaller number of California Brown Pelicans
- Refuge and others were unprepared for outbreak
- Type C botulism identified as causative agent

Post-1996 response Efforts

- Multi-agency effort
- Recovery ratio of live: dead birds increasing
- Rehabilitation success stable
- Overall release success @ 40%
- Differences between Brown and White
- Hospital and other facilities are improving
- Currently work with 5 rehabilitation facilities



White Pelican Recoveries

	1996	1997	1998	1999	2000	2001
Dead	8539	338	94	19	103	52
Live to Rehab	400	146	34	18	88	61

Brown Pelican Recoveries						
	1996	1997	1998	1999	2000	2001
Dead	1129	248	121	264	434	111
Live to Rehab	1200	129	90	380	877	315

Estimate Rehabilitation Success Rate: Brown vs. White Pelicans						
	1996	1997	1998	1999	2000	2001
% Brown Success				66.3	67.4	57
% White Success				16.7	61.4	50.8

What have we learned?

- Frequent surveys important to success rate
- Juveniles drive high recovery years
- Juveniles respond better to treatment
- White pelicans have lower rehab success
- Secondary infections and injuries are impt
 - Hock and eye lesions/abrasions
 - Bacterial infections

What we still don't know

- Standardized recovery and treatment protocols
- How soon to begin treatment is good enough
- Eye lesion cause and treatment
- Bacterial infectious agents
- Long-term survival and recruitment

Current and Future Plans

- Continue to provide support for research efforts
- Continue oversight of Disease Response Program
- Partnership with rehabilitators and Salton Sea Authority to provide 'flight pens'

More Plans

- Current discussions of joint Madison Health Laboratory/Refuge/other veterinary assistance
- Upgrade pathology lab to a permanent facility
- Current discussions regarding long term survival study of released birds