

## **Table of Contents**

Executive Summary.....	2
Introduction.....	3
Methods.....	4
Results and Discussion.....	4
Survey Coverage.....	4
Data Summarization.....	5
Anchorage.....	6
Mat-Su Valley.....	7
Kenai Peninsula.....	8
Website Survey.....	10
Outreach and Education Efforts.....	10
Recommendations.....	10
Acknowledgements.....	13
Literature Cited.....	13
Appendix A... Poster “Loon Legends”.....	14

## **Tables and Figures**

Figure 1. Number of lakes surveyed by Alaska Loon Watch volunteers from 1985-2002.....	5
Table 1. Observations of Common and Pacific Loons on lakes in southcentral Alaska during 2000-2002.....	9

## **Executive Summary**

All five species of loons live and breed in Alaska, but Common and Pacific loons are the predominant species found on lakes in southcentral. Since 1985, members of the Alaska Loon Watch have been monitoring lakes for loon activity. Observations have occurred primarily within the communities of Anchorage, the Mat-Su Valley, and the northern Kenai Peninsula. Volunteer participation and coverage has varied from year to year, but remains relatively stable.

During years 2000-2002, loons were surveyed annually on 18-27 lakes in Anchorage (including Ft. Richardson and Elmendorf AFB), 44-60 lakes in the Mat-Su Valley, and 21-27 lakes on the Kenai Peninsula. Productivity, defined as the number of nesting pairs divided by the number of chicks surviving to the end of August, averaged 0.84 (range 0.77-0.92) for Common loons and 0.59 (range 0.20-0.83) for Pacific loons. Local loon population trends are difficult to assess due to confounding factors of volunteer coverage, interpretation, and small sample sizes.

Needs for a loon color-banding program and increased coverage of lakes in all areas of southcentral Alaska is stressed. More accurate data on loon demographics including juvenile dispersal and return rates would aid in the proactive management of local loon populations potentially at risk from rising anthropogenic pressures.

## **Introduction**

Loons are high profile, ubiquitous birds found throughout Alaska and a major attraction for visitors and residents seeking a wilderness experience. Not only considered an aesthetic resource, loons are often deemed important indicators of ecosystem health. While all five species of loons are regular breeders in Alaska, only Common (*Gavia immer*) and Pacific loons (*G. pacifica*) reside in Anchorage, the largest city in North America with nesting loons.

While statewide Common and Pacific loon populations appear to be stable (Groves et al. 1996), declines in lake occupancy and productivity of these loon species in southcentral Alaska have raised concern about the future of these local populations (Fair 1998). Increasing human disturbances from recreational activities on lakes, loss of nesting habitat, reduced food availability, and pollution are all potential factors contributing to these declines.

To assess the distribution, productivity, and status of loons in southcentral Alaska the Alaska Loon Watch (ALW) was initiated by the Alaska Department of Fish and Game (ADF&G) in 1985, and since 2000 has been coordinated by the U.S. Fish and Wildlife Service in Anchorage. This monitoring program relies heavily on volunteer participation. The involvement by local citizens has proved invaluable; the program has not only stimulated interest in loon conservation, but has also raised concern about the welfare of the local environment.

This report summarizes the education, outreach, and monitoring efforts of the Alaska Loon Watch during years 2000-2002 for lakes in Anchorage (including those on Fort Richardson and Elmendorf Airforce Base), the Matanuska-Susitna Valley (Mat-Su),

and the Kenai Peninsula. Recommendations are made regarding future education and outreach efforts and potential research topics.

## **Methods**

Each May (2000-2002), packets consisting of observation report forms and instructions were distributed to Alaska Loon Watch members. Packets were mailed to all members who have been active at some point in the last five years, including new ALW members who signed up at outreach and education events. Observers were instructed to watch water bodies through the spring, summer, and fall, and to report all loon activity including presence/absence, arrival and departure dates, species, evidence of nesting, nest locations, chick production, and known causes of reproductive failure.

## **Results and Discussion**

### *Survey Coverage*

Surveys primarily covered water bodies in Anchorage, the lower Mat-Su Valley, and the northern half of the Kenai Peninsula. There were also reports from outlying areas such as Denali National Park, Glenallen, and Kachemak Bay. The number of lakes observed varied from year to year and across areas, but volunteer participation has remained relatively stable since the beginning of the program in 1985 (Fig. 1).

### *Data Summarization*

Results from returned survey forms are reported in Table 1. Variability in volunteer coverage and definitions of “territorial pair” make it difficult to assess the reproductive population of loons based on total loons observed. Therefore, area summaries in Table 1 focus on the number of confirmed nesting pairs, number of chicks,

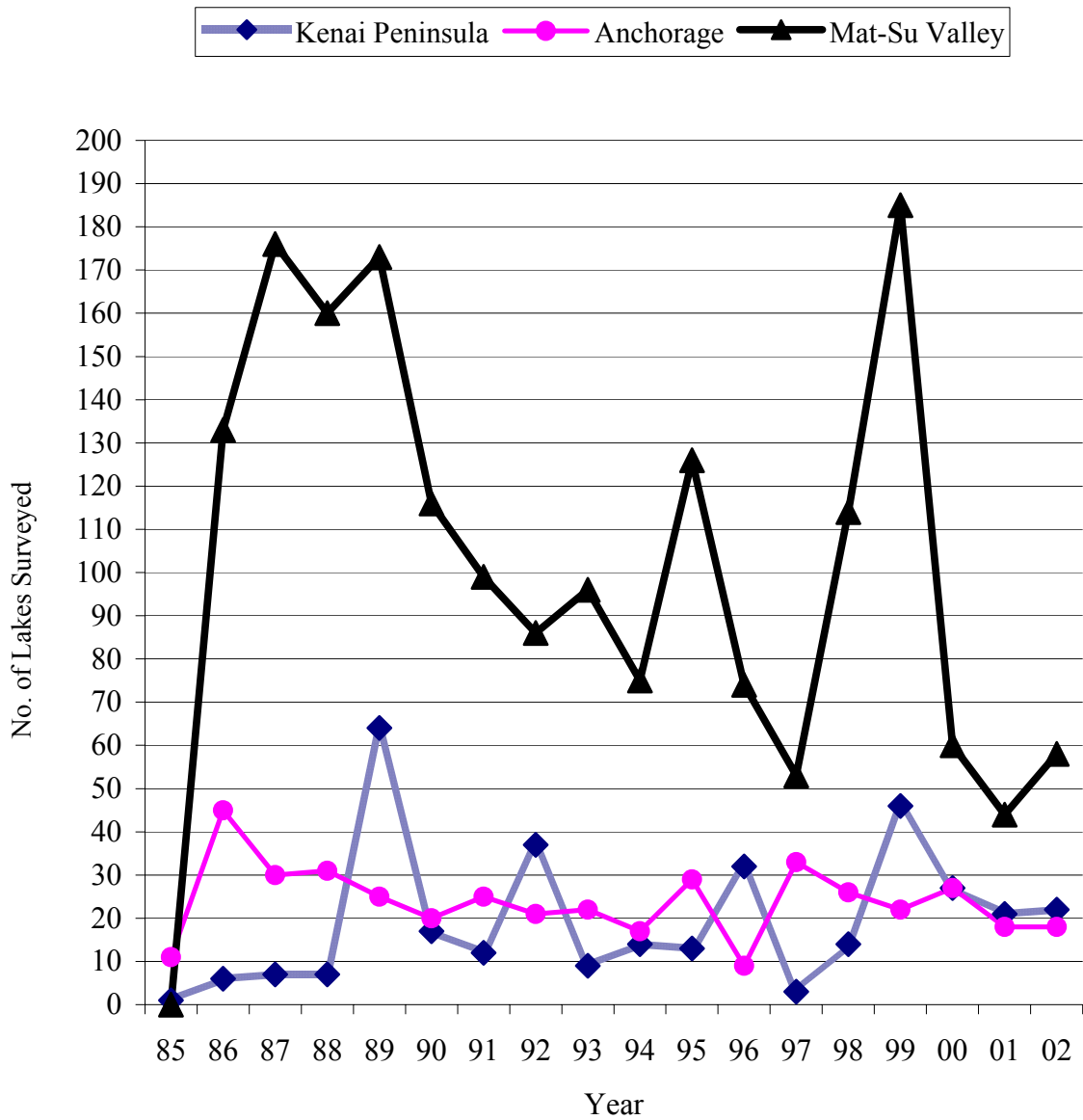


Figure 1. Number of lakes surveyed by Alaska Loon Watch volunteers from 1985-2002.

and total number of chicks that survived through the end of August. For this report productivity is defined as:

$$\text{Productivity} = \frac{\text{number of chicks surviving until the end of August}}{\text{number of nesting pairs}}$$

### *Anchorage Bowl*

Lakes in the Anchorage Bowl continue to be dominated by Pacific loons. Most lakes in the area are smaller and lack sloping shorelines that may preclude use by breeding Common loons due to size and nutritional constraints. The high variability in productivity of Pacific loons is likely confounded by a small sample size. Nevertheless, some lakes with previous breeding activity by Pacific Loons are no longer used. This may reflect abandonment as a breeding territory due to human disturbances or poor juvenile survival; loons typically establish breeding territories within 10 km of their natal lakes (Evers, pers. comm.). Without the aid of a color-banded population, determining the loss of breeding pairs remains speculative.

Common loons are found predominately on the military bases north of the Anchorage Bowl. These lakes are larger, deeper, and surrounded by steeper sloping shorelines typical of a northern boreal forest. Years of low productivity for loons on the military bases may reflect higher predation pressures by eagles, fox, and other natural predators. The military bases have more undisturbed and undeveloped land around it's lakes than the Anchorage Bowl, which reduce effects of human disturbance but increases predation opportunities due to higher predator densities in these less active areas.

### *Mat-Su Valley*

While Common and Pacific Loon production varied little from 2000-2002 (Table 1), the decline in number of Pacific Loon observations since 1986 has raised concerns of biologists and residents alike (Fair 1998). Pacific Loons were reported nesting on 19 lakes in 1986 but were not reported nesting on any lake in 1997. Though this decline in lake occupancy may reflect ALW coverage, it could also suggest abandonment by resident breeders or failure of juveniles to return and establish breeding territories. Again, without a color-banded population, determining the loss of breeding pairs remains speculative.

One of the biggest threats to loons in the Mat-Su Valley is the increase in the human population. Lakeshore development and increased recreational activities are commonly reported by ALW members and have raised concerns about the impacts local loon populations. The use of personal watercraft and development of shoreline habitat for new housing are concerns most often reported by ALW members. Although the Mat-Su Borough will work with residents to establish a lake management plan rules are hard to enforce and require strong community participation.

Volunteer participation in the Mat-Su Valley should be increased. Recruitment efforts have been limited to a few annual outreach events in Anchorage. Several lakes on the road system are no longer being observed or have lost ALW volunteers. Because of the tremendous growth occurring in the Mat-Su Valley, it is imperative that the ALW program is enhanced to increase the number of lakes observed.

## *Kenai Peninsula*

The northern Kenai Peninsula has over 2,000 lakes large enough to support loons (Smith, 1981) and remains relatively isolated from direct anthropogenic factors. This is largely due to presence of the Kenai National Wildlife Refuge, which encompasses 700,000 hectares of the low hills, bogs, muskegs, and lakes. Limited road access within the KNWR and the density of high quality wetland habitats make this area a major attraction for loons and other wildlife species. Aerial surveys conducted since 2001 reveal high lake use by loons on the northern Kenai Peninsula including lands within and surrounding the KNWR (Mills, pers. obs.).

While the Kenai Peninsula remains relatively “wild”, the area is also experiencing changes due to a growing human population. Current reports from residents on lakes in the Kenai Peninsula mirror reports from residents in the Mat-Su Valley submitted during the early 1990’s. While the sprawl and intensity of human pressures in the Kenai Peninsula have yet to reach levels occurring in the Mat-Su Valley, subdivisions are being developed around lakes, recreational activities, including use of personal watercraft, are increasing, and lake management plans are lacking or hard to enforce.

It is difficult to address the stability of loon populations on the Kenai Peninsula from ALW data due to limited survey coverage. The ALW program is relatively new to communities on the Kenai Peninsula and while reports have been submitted since the program’s inception, consistent participation and coverage has been lacking. Efforts were made by the Kenai NWR in 2000 and 2001 to increase volunteer coverage of ON and OFF Refuge lakes in the northern portion of the Kenai Peninsula through educational slide shows and talks. Efforts need to be increased to recruit ALW participation by area



Table 1. Observations of Common and Pacific Loons on lakes in southcentral Alaska during 2000-2002.

	<u>COLO</u>			<u>PALO</u>		
	2000	2001	2002	2000	2001	2002
<b><u>Anchorage Bowl</u><sup>1</sup></b>						
No. lakes observed	15	8	8	15	8	8
No. nesting pairs	1	1	0	6	2	3
No. cks hatch	2	0	0	7	2	1
No. cks survived <sup>2</sup>	2	0	0	4	1	1
Productivity <sup>3</sup>	2.00	0.00	n/a	1.00	0.50	0.33
<b><u>Elmendorf AFB</u></b>						
No. lakes observed	8	6	6	8	6	6
No. nesting pairs	3	3	3	1	1	1
No. cks hatch	4	2	4	0	0	2
No. cks survived	1	1	2	0	0	2
Productivity	0.33	0.33	0.66	0.00	0.00	2.00
<b><u>Fort Richardson</u></b>						
No. lakes observed	4	4	4	4	4	4
No. nesting pairs	2	2	2	0	0	0
No. cks hatch	0	1	3	0	0	0
No. cks survived	0	1	3	0	0	0
Productivity	0.00	0.50	1.50	n/a	n/a	n/a
<b><u>Mat-Su Valley</u><sup>4</sup></b>						
No. lakes observed	60	44	59	60	44	58
No. nesting pairs	37	29	21	6	2	2
No. cks hatch	40	40	35	8	3	3
No. cks survived	32	25	24	6	3	2
Productivity	0.86	0.86	1.14	1.00	1.50	1.00
<b><u>Kenai Peninsula</u></b>						
No. lakes observed	27	21	22	27	21	22
No. nesting pairs	13	17	13	2	0	1
No. cks hatch	17	15	2	2	0	0
No. cks survived	12	13	7	1	0	0
Productivity	0.92	0.76	0.54	0.50	n/a	0.00

<sup>1</sup> includes Eagle River, Peters Creek, Chugiak, Birchwood, and Eklutna.

<sup>2</sup> survived = chicks remained at the end of August.

<sup>3</sup> productivity = no. cks survived/ no. of nesting pairs.

<sup>4</sup> includes Talkeetna, Sutton, Denali Natl. Park, Glenallen, and Skwentna.

residents. Time constraints and limited administrative personnel have made it difficult to elevate the program to the level needed for proactive management and effective monitoring.

### **Website Survey**

In 2002, ALW members were requested to express their interest in establishing a website dedicated to the program and to receive comments and suggestions on how the ALW could be improved. Although 67% of survey participants were interested in having a website developed, 60% also wanted to continue receiving information in the regular mail. Seventy-six percent of the participants indicated they had access to a computer with Internet capabilities.

### **Outreach and Education Efforts**

Education plays an important role in loon conservation and is a fundamental goal of the ALW program. Results of many case studies demonstrate that loons and people can live together if certain guidelines are followed. Informed citizens are eager to educate others about the needs of loons which helps create a community conservation effort. The enthusiasm of local residents and their avid participation in the ALW has been key to the ALW's success, and public education and involvement is imperative for continued success of the ALW.

Outreach and education efforts for 2000-2002 included appearances at community events, development of an ALW logo (see title page), sponsorship of a "Loon Legends" poster (Appendix A), distribution of literature, and recruitment of new ALW volunteers (see *Anchorage 2000 Loon Watch Report*), school visits, slide show presentations on

loons sponsored by the Kenai NWR, and the continuation of the Junior Loon Ranger Pledge and other loon displays at International Migratory Bird Day. Most adult education and volunteer recruitment has occurred as a result of phone calls received during the spring and summer when conflicts arise on lakes. Also, information made available at International Migratory Bird Day and Canoe Fun Day continue to raise awareness of the program and need for volunteers.

### **Recommendations to Improve ALW Program**

The ALW is a relatively low-cost citizen science program that plays a key role in the conservation of loons and wetland habitats in Southcentral Alaska. While the benefits of the ALW are apparent, this highly effective outreach and monitoring tool could be improved and enhanced. The following recommendations have evolved from suggestions from citizens, lake residents, and Alaska Loon Watch volunteers, and from actions taken by other loon groups in North America.

1. Hire an Intern

- The U.S. Fish and Wildlife Service should hire an intern to increase and expand monitoring efforts of new lakes and lakes historical nesting no longer being monitored as well as recruit and train new volunteers for the program.

2. Continue or Initiate Participation at Outreach Events

- Such as International Migratory Bird Day, Canoe Fun Day, and the Great Alaska Sportsman Show.

3. Toxic Lead Sinker Exchange

- Partner with area businesses and ADF&G Division of Sportfish to encourage fishermen to trade in toxic lead sinkers for non-toxic alternatives. Emphasize the hazards associated with discarded monofilament line, hooks, and lead sinkers.
- 4. Develop a “litter patrol” through a new Adopt-a-Lake program
  - Request area businesses and people to pick up trash in and around the lake. Work with the Municipality of Anchorage to place more trashcans at lakes with heavy public use.
- 5. Create a website for the Alaska Loon Watch
  - Includes upcoming events, who to contact about developing a lake management plan, the ability to download reports and enter survey data, and provides links to other sites about pertinent legislation regarding land and water use and to other relevant organizations.
- 6. Develop Citizen Protocols
  - For dealing with harassment of loons and other waterfowl, what to do with a carcass or loon egg, and develop an updated list of contacts. Make this available on the website.
- 7. Loon-friendly Lakeshore Development Guidelines
  - Develop guidelines to environmentally sensitive lakeshore development. Offer alternatives to commercial fertilizers and recommendations for maintaining important lakeshore habitats. Possibly organize a seminar by local landscape specialists.
- 8. Alaska LoonWatch Newsletter

- Establish a quarterly newsletter (or update website) and share information with other Loon groups in the country and abroad.
- 9. Establish an “Outstanding Loon Ranger” Award
  - Given to a volunteer whose contributions and efforts for loon conservation go above and beyond expectations.
- 10. Establish 5, 10, and 15-year “Recognition of Service” Awards
  - For Alaska Loon Watch members who have been monitoring lakes and returning reports for many years.

### **Acknowledgments**

The Alaska Loon Watch Program is supported by the U.S. Fish and Wildlife Service’s Nongame Migratory Bird Management project. The accomplishments of the Alaska Loon Watch would not have been possible without the help of several collaborators: Dr. Brad Andres, Rick Mills, Elizabeth Jozwiak and Kenai NWR staff, Jeff and Nancy Fair, Paul Cotter, Heather Johnson-Schultz, Linda White, Owen Hughes, Terry Shick (Fort Richardson), Allen Richmond (Elmendorf Airforce Base), Ray Jose and many employees of the Municipality of Anchorage, Anchorage International Airport personnel, and the tremendous dedication and effort of all ALW the volunteers.

### **Literature Cited**

Fair, J. S. 1998. The Status of Loons in Anchorage and the Lower Matanuska-Susitna Valley of Alaska: A Summary Report of Alaska Loon Watch 1985-1997. Unpubl. rep., Anchorage Audubon Soc., Anchorage, Alas. 36 pp.

Groves, D., B. Conant, R.J. King, J.I. Hodges, and J.G. King. 1996. Status and trends of loon populations summering in Alaska, 1971-1993. *The Condor* 98:189-195.

Mills, T. K. 2000. Anchorage 2000 Loon Watch. Unpubl. Rep., USFWS, Anchorage, AK. 46 pp.

Smith, E. L. 1981. Effects of canoeing on Common loon reproduction and survival on the Kenai National Wildlife Refuge. M.S. Thesis, Colorado State Univ. 53 pp.

Appendix A. Poster sponsored by the Alaska Loon Watch Program.

