MONITORING OF NESTING SPECTACLED EIDERS ON KIGIGAK ISLAND, YUKON DELTA NWR, 2014

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SUMMARY

Nesting spectacled eiders were monitored for the 23rd consecutive year at Kigigak Island, Alaska in 2014. Clutch size, hatch date, and final nest status were used to estimate the nesting success of female spectacled eiders. Adult females were resighted, captured, and marked to estimate annual survival. Spectacled eider broods were captured to monitor weight, recruitment, survival, morphometric changes, and duckling survival. Salinity, temperature, and pond depth were recorded for brood capture ponds.

Of the 48 nest plots at Kigigak Island, 42 were searched. Mean clutch size was 4.64 ± 1.2 (SD). Mean nest initiation and hatch dates were 14 days earlier than 2013. The estimated Mayfield nest success of 94 nests was 37.9% (95% CI; 23.2 – 52.6%). Twenty-six of the 100 nesting adult females were resighted. Nineteen adult females and 74 ducklings (43 male, 31 female) were caught during brood captures. Only 6 of the 19 adult females were previously marked. Additionally, one adult female was visually identified but not captured. Average weight of adult females was 1202 g ± 94.7 (SD), average culmen was 25.4 mm ± 1.4 (SD), and average tarsus was 55.9 ± 1.4 (SD). The average duckling weight was 701 g ± 144.7(SD), average tarsus was 53.05 mm ± 6.3 (SD), average culmen was 21.3 ± 1.6 (SD), and average 9th primary was 75.9 mm ± 27.8 (SD). All ponds that broods were captured in were irregular shaped and were found in a mixed variety of high sedge and graminoid habitats. The average temperature of the ponds was 14°C ± 1.7 (SD), the average depth was 11.7 cm ± 4.1 (SD), and the average salinity was 10.6 ppt ± 5.1 (SD).

Nesting chronology was earlier in 2014 due to a low snow year and subsequent early spring breakup. Most waterfowl were incubating with many approaching the middle of incubation by the time the field camp was deployed. Spectacled eider nest success at Kigigak Island was the 3rd lowest recorded and well below the long-term average.

KEY WORDS

Spectacled Eider, Nest Success, Survival, Recruitment, Mark-Resight, Salinity, Brood Capture, Mist-net, Bow-trap, Nasal Disc, Tarsal Band.

INTRODUCTION

Spectacled eiders (*Somateria fischeri*) were listed as a threatened species under the Endangered Species Act in 1993 (Fed. Register 1993). The Spectacled Eider Recovery Team was established shortly after and a recovery plan was implemented (U.S. Fish & Wildlife Service 1996). It has been revised periodically since with the most recent in 2010. The research conducted at Kigigak Island directly or indirectly relates to several priorities listed in the most recent updated recovery plan.

Data collected at Kigigak Island over the last 23 years has included clutch size, hatch date, and final nest fates for determining spectacled eider nest success (see 2010 list of High Priority Tasks: 20b); resighted, captured, and marked adult females to estimate annual survival (see 2010 list of High Priority Tasks: 7 and 20b); and captured spectacled eider broods to monitor changes in body weight, recruitment, and duckling survival (see 2010 list of High Priority Tasks: 18 and 20a). The long term research and monitoring work continued at Kigigak Island in 2014.

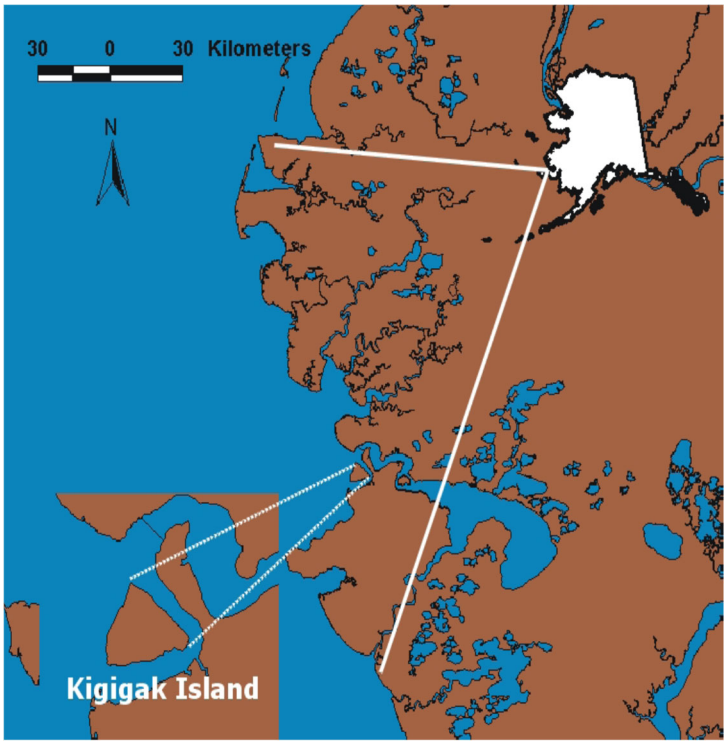

Figure 1. Location of study area at Kigigak Island on Yukon Delta National Wildlife Refuge, Alaska.

USFWS Study Objectives

1. Determine clutch size, hatch date, and nest success of spectacled eider females to estimate nesting success.
2. Resight or capture and mark adult females to generate estimates of adult female annual survival.
3. Capture and mark ducklings prior to fledging to estimate recruitment and duckling survival.

STUDY AREA

Kigigak Island (60°50'N, 165°50'W) is 32.5 km^2 in size and located along the coastal fringe of the Yukon Delta National Wildlife Refuge (Figure 1). It is bordered by the Bering Sea to the west,

the Ninglick River to the Northeast and Baird Inlet to the Southeast. Sloughs and small ponds are surrounded by grasses, sedges, and tundra vegetation. The area is highly influenced by daily tides and floods frequently during spring snowmelt and seasonal storms.

METHODS

Data Collection

A five-person research crew searched Kigigak Island for spectacled eider and pacific common eider (*Somateria mollissima* v. nigra) nests over 42 of 48 historically known spectacled eider nesting plots measuring 412 m x 412 m (Harwood and Moran 1993) (Figure 2). Nest plots (n=42) were searched once between 4 June and 14 June. Each plot took from 3 to 8 hours to complete depending on distance from camp and density of nests found. Additional nests were found while walking opportunistically within and between plots. Pacific black brant (*Branta bernicla nigricans*) nests were monitored at one location during the course of the field season and common eider (*Somateria mollissima*) nests encountered within nests plots were also monitored to determine nest success.

Data were collected using methods developed by the USGS Alaska Science Center (Grand 1993). A white flag was placed 2 m north of each nest upon initial discovery. The location was marked on an aerial photo and in a Garmin eTrex HC GPS unit. Coordinates were taken in WGS 1984 and converted to North America 1983 (UTM) Zone 3N. Eggs discovered were uniquely numbered so new or lost eggs could be recorded upon subsequent nest visits. The number of days of incubation was determined by either floating (Westerkov 1950) or candling (Weller 1956) eggs. Ten contour feathers were collected from the bowl of each spectacled eider nest for stable isotope and DNA analyses in the future.

Nests were visited between 1 and 5 times to check status of the nest, incubation stage, and to catch the adult female. Adult females were trapped as close to the 24 day hatch date as possible to minimize the chance of adult female abandonment.

When a banded and/or nasal saddled female was discovered upon initial nest finding we attempted to read the numerical code from the nasal or tarsal band with binoculars, spotting scope or Nikon D700 camera on each subsequent nest visit or until we read the code. If a female could not be identified, we trapped her just prior to hatch.

Bownets (Salyer 1962) with a manual trigger were used to trap unmarked female spectacled eiders and those whose bands or nasal saddles could not be read. Birds were trapped as close as possible to the end of the 24 day incubation period. Unbanded (new) birds were given a

metal USFWS leg band and a yellow and black plastic numerically coded plastic tarsal leg band. Weight, culmen, and tarsus measurements of female spectacled eiders were recorded (Dzubin and Cooch 1992).

Broods were captured at ~30-35 days of age during the third week of July when tarsal size of ducklings are large enough to accommodate an adult leg band. Captures took place over most of the available habitat (areas without dry mudflat). Broods, including ducklings and the adult female were trapped using mist nets stretched across ponds. Small dip nets were used to catch ducklings that escaped the mist net. Unmarked adult females and duckling females were given a metal US. Fish & Wildlife Service leg band and a yellow and black plastic numerically coded tarsal band. Male ducklings were given a metal U.S. Fish & Wildlife Service leg band. Weight, culmen, and tarsus measurements were taken for both ducklings and adults. The 9th primary feather in each wing was also measured for each duckling. Salinity, temperature, and depth measurements were collected from each pond that broods were captured at.

Banding data was entered into the BANDIT software program from the USGS Bird Banding Laboratory at the completion of the field season. All banded birds that were encountered were entered online (www.reportband.gov).

Data Analysis

All eggs were found after incubation and clutch size was the total number of eggs laid in the nest. Clutch age was estimated using float angle and candling methods. Nest initiation dates were calculated by taking the first day of incubation and subtracting one day for each egg laid (Grand and Flint 1997). Hatch dates for spectacled eiders were estimated to determine a trap date for nesting females to band and collect morphological measurements.

Apparent egg success (#eggs/total eggs) was calculated for all inviable, destroyed, hatched, depredated, and unknown eggs. Eggs were classified as hatched if membranes or ducklings were present in the nest. An egg was considered unknown if there were no obvious signs of hatched eggs, such as an empty nest bowl, or nest down strewn without any egg shells or membranes. Cold eggs in the nest were considered abandoned and were noted as human caused if occurring after trapping the adult female.

Apparent nest success (# nests/total nests) from field data collection was calculated for all monitored nests and included hatched, depredated, abandoned, and unknown nests. A nest was successful if ≥ 1 egg hatched. Mayfield nest success was calculated using Program Mark (Dinsmore et al. 2002). This analysis excluded nests with unknown fates, nests with all inviable eggs, and nests abandoned from human disturbance. An exposure period of 29 days was used for a constant daily survival rate (Harwood and Moran 1993).

RESULTS

Nesting Chronology

A five-person research crew arrived on Kigigak Island between 31 May and 1 June. Low snow conditions and warm early spring weather resulted in an early break-up occurring in mid-May. The island was snow and ice free upon arrival. Most spectacled eiders were well into incubation with many nearly mid-way through.

Nest initiation in 2014 occurred between 7 May and 3 June (Figure 3) with a mean initiation date on 19 May. Mean initiation was 13 days earlier than 2013. Hatch occurred between 5 June and 2 July with a mean peak hatch date of 16 June (Figure 4). The mean hatch date was 14 days earlier than 2013.

The research crew began searching for nests on 2 June, 11 days earlier than 2013, but incubation was already well underway. Of the 48 total spectacled eider nest plots, 42 were searched resulting in 100 total nests found between 2 June and 23 June.

Clutch Size

Spectacled eider clutch size ranged from 1 to 7 eggs (Figure 5), with a mean of 4.7 ± 1.2 (SD) eggs (Table 1). Average clutch size for 2014 was slightly lower than 2013 (4.8) but similar to the long term trend line (Figure 6).

Apparent Egg Fate

The apparent fate of 468 eggs was determined, including: 276 hatched (59.0%), 95 depredated (20.3%), 8 abandoned from natural causes (1.7%), 22 abandoned due to nest monitoring activity (4.7%), 10 inviable or addled (2.1%), 2 broken (0.4%), 3 destroyed/dead (0.6%), and 52 unknown (11.1%) (Table 2).

Nest depredation typically occurs from several predators consisting of glaucous (*Larus hyperboreus*) and mew gulls (*Larus canus*) as well as arctic fox (*Alopex lagopus*). The 95 depredated eggs, 20.3% of all eggs was slightly higher than the long term 23 year average of 21.5%. With the outlier years removed (2001, 2003, 2013) the long-term average is 15.3% (Figure 7).

Nest Success

In 2014, the fate of 100 spectacled eider nests was determined. Of these, 72 nests hatched (72%), 8 had unknown nest fates (8%), and 20 were depredated (20%). The Mayfield nest

success estimate of 94 nests was 37.9% (95% C.I. 23.17 – 52.62) (Table 3). This represented a 35% higher nest success from 2013, but well below the long term average of 64.5% (Figure 8).

Female Resight/Recapture

A total of 26 adult females were resighted in 2014 from prior years. Of these, 14 of the females had nasal saddles that were sighted by use of camera or spotting scope. Tarsal bands were read on the other 12 resighted females. Of the 100 monitored nests in 2014, at least 50% were previously marked on Kigigak Island.

Brood Capture

Across Kigigak Island, 28 broods were captured between 20 and 22 of June. A total of 74 ducklings (45 male, 29 female) were weighed, measured, and banded. Nineteen adult females were captured with the broods. Six were recaptures and thirteen were previously unbanded. In addition, one nasal saddled female was resighted with a brood but was not captured. The average duckling weight was 701 g ± 144.7(SD), average tarsus was 53.05 mm ± 6.3 (SD), average culmen was 21.3 mm ± 1.6 (SD), and average 9th primary was 75.9 mm ± 27.8 (SD). The average weight of captured adult females was 1202 g ± 94.7 (SD), average tarsus was 55.9 mm ± 1.4 (SD), and average culmen was 25.4 mm ± 1.4 (SD) (Table 4).

All ponds that broods were captured in were irregular shaped and were found in a mixed variety of high sedge and graminoid habitats (Grand et al. 1997). The average temperature of the ponds was 14°C ± 1.7 (SD), the average depth was 11.7 cm ± 4.1 (SD), and the average salinity was 10.6 ppt ± 5.1 (SD).

Observed Mortality

Over the entire field season, no adult female spectacled eiders died as a result of field monitoring and banding efforts, however one adult female was found dead while nest searching. It was fully intact with no obvious clues to indicate a cause of death.

During brood captures one female duckling mortality event occurred on 22 July while banding a brood that included an adult female and one other duckling. The duckling that perished appeared to be breathing heavily during banding and attempts to revive it were unfortunately to no avail.

Fox Observations

Arctic fox (*Vulpes lagopus*) were observed over the course of the entire field season at Kigigak Island. Cache sites were located west and southwest of camp with some seeing recent activity

(freshly dug, clumps of dry fur, etc.) and others that appeared abandoned (matted clumps of fur, wet displaced soil). Early in the season, an adult was observed at a cache site west of the new camp site and when it noticed observer presence, carried each pup individually in its mouth approx. 150 m to a dry pond. It proceeded to travel back and forth until it had moved ≥ 8 newborn pups that had eyes still closed.

The old campsite appeared to be the main den site on the island. It was assumed that just the one fox family was present as no more than two adults were observed at any time during nest searching. Carcasses at the den site were mostly adult and juvenile cackling geese (*Branta hutchinsii minima*) and black brant (*Branta bernicla nigricans*).

Upon arrival for July brood captures, the fox den had moved within 100 m of the new campsite in the upland terrace just west of the weatherport where at least four pups were seen active outside the den.

DISCUSSION

Due to an early break-up, the Kigigak field crew arrived 31 May – 1 June to a completely ice and snow free island. Nearly all bird species on the island were already nesting, with many nearing the middle of incubation. This resulted in a 13-14 day earlier start to the nesting season than 2012 and 2013.

Personnel focused efforts on resighting as many banded females as possible particularly because of the late start on nest monitoring. Resighting females with cameras, binoculars, and spotting scopes can save a lot of time because it eliminates the need to return to the nest to try to trap the female, thus reducing disturbances around the nest. Again, as in recent years, many previously marked females had lost their nasal saddles. One nest found on 8 June was hatched with ducklings in the nest and half of the nasal saddle (one disk and the wire) in the nest bowl. It would appear from examining this incident as well as observations in prior years that the females scratch at the nasal saddle with their feet and nails, likely weakening the nasal saddle around the washer and eventually wearing at it to the point of falling out.

2014 was again a low nest success year, although up from 2013. The Mayfield estimate for nest success (37.9%) was the third lowest estimate since 1992, following 2001 and 2013. The apparent nest success (75.5%) was right on par with the long-term average (also 75.5%). However, with the late arrival of personnel, it's very likely that a significant percentage of early nests were missed that may have been depredated or abandoned. Of the 48 total plots, 42 were searched (87.5%). However, they were searched just once thoroughly and personnel arrived when birds were already nesting and well into the incubation period. Normally, crews

arrive prior to nest initiation, thus capturing early nesting activity, and allowing for more routine nest checks. A second search of eider plots helps to capture the late nesting birds. Arriving late in 2014 made it challenging to maintain a normal nest monitoring schedule. It also did not allow for very much error in floating or candling estimates for incubation stage. It was difficult to get nest checks in because of the need to continue searching new areas for eiders while starting trapping at the same time. As a result, many nests were found initially and trapped on the first visit back to the nest, with some cases where a nest was found and already far enough into incubation to trap immediately. Weather was unusually mild in 2014 with very few windy days, and no major storms to impact the nesting or hatching period. Human caused nest abandonment was the second highest on record (4.7%) behind 1997 (13%). It is unclear why this was the case, as adult females were trapped within the 3-4 day window and handled as minimally as possible per the traditional protocol.

Ducklings were trapped during the third week of July 2014 to capture juveniles at an average of 34 days of age. Duckling body mass was the third lowest on record. The three lowest body mass averages have all been since 2008 (Figure 9). Hatch was spread out in duration and during capture two ducklings had already fledged and could not be caught. The majority of broods captured were found north of the old camp lake and west of the new camp location. During captures, 13 of the 20 adult females captured (65%) with broods were unmarked. During the 2012 field season, 36% were unmarked during brood captures and 64% were not trapped or resighted during 2012 prior to brood captures (Gabrielson 2012). In 2013, 2 of 16 (12.5%) brood captured females were previously seen during the season (Gabrielson and Spragens 2013). This current trend during the recent brood capture years indicates that either a high percentage of females are not being captured or resighted during the incubation period, or there is a high influx of females and broods moving from other areas of the mainland to Kigigak Island during brood rearing. Future studies may need to reevaluate the historic nest plots and search areas of the island outside of current plots.

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This project would not be possible without the logistical support and dedication of everyone involved including: Pilots M. Wade and R. Sundown for safe flights and flexibility. Pilot S. Herman provided helicopter assistance for camp breakdown. Field assistants E. Watford, L. Bonczek, C. Moore, and J. Barth hit the ground running and didn't let up during a fast paced season. Thanks to K. Spragens for assistance during camp establishment and logistical support and to M. Gabrielson for statistical assistance and expertise with the report. Thanks also to B. McCaffery, K. Sowl and the entire Yukon Delta National Wildlife Refuge staff for direct or indirect support of the project during a short-staffed field season.

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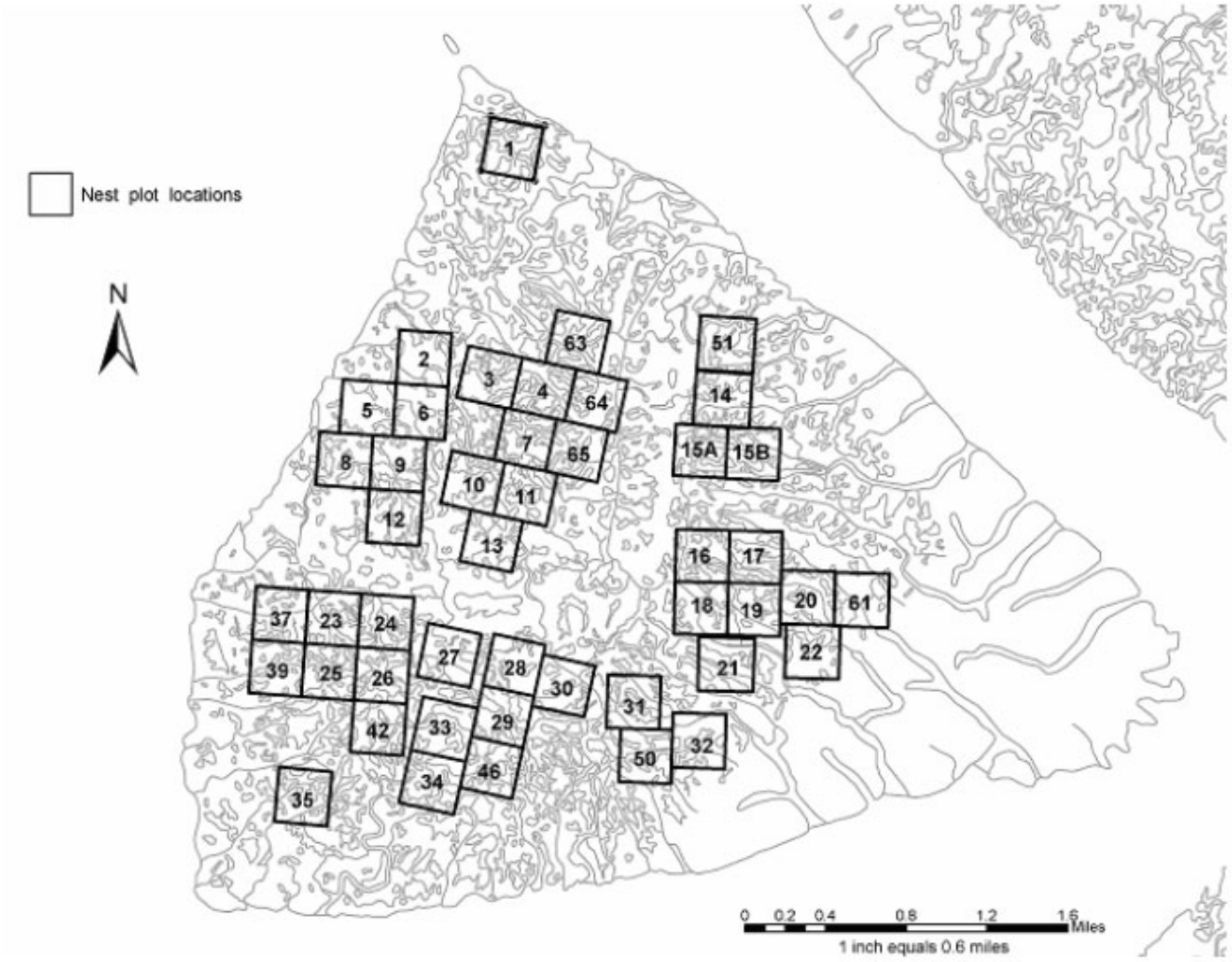

Figure 2. Location of spectacled eider plots (n=48) on Kigigak Island, Yukon Delta National Wildlife Refuge, Alaska. Plots 66 and 68 are not shown (66 is east of 11 and 68 is east of 13).

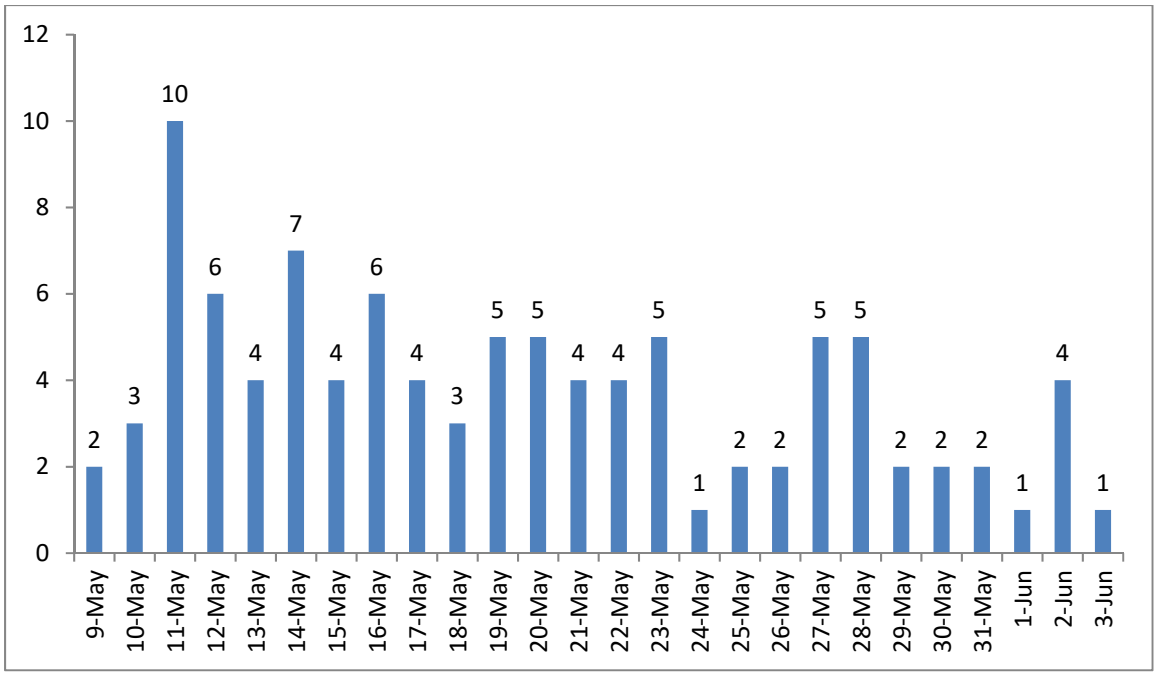

Figure 3. Estimated dates for spectacled eider nest initiation in 2014.
*Estimates assume a 24 day incubation period and an egg laying rate of one per day.

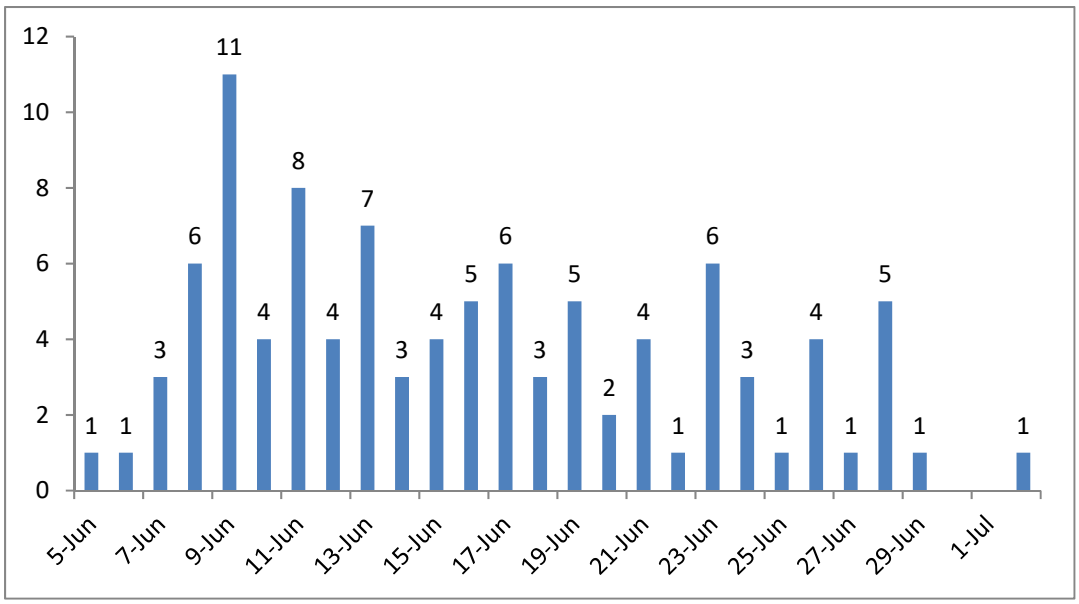

Figure 4. Estimated hatch dates for spectacled eider nests at Kigigak Island in 2014.
*Estimates assume a 24 day incubation period.

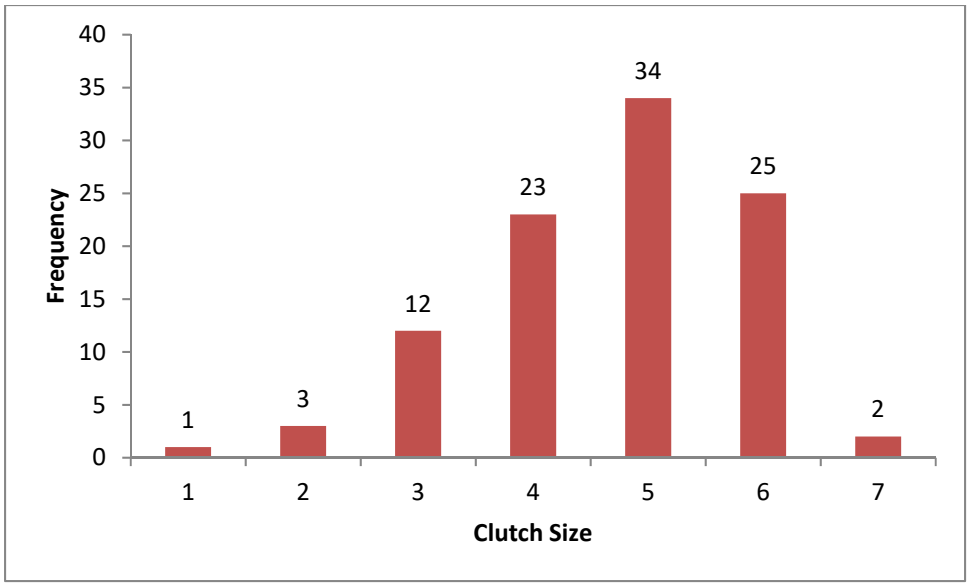

Figure 5. Clutch size frequencies for spectacled eider nests at Kigigak Island in 2014.

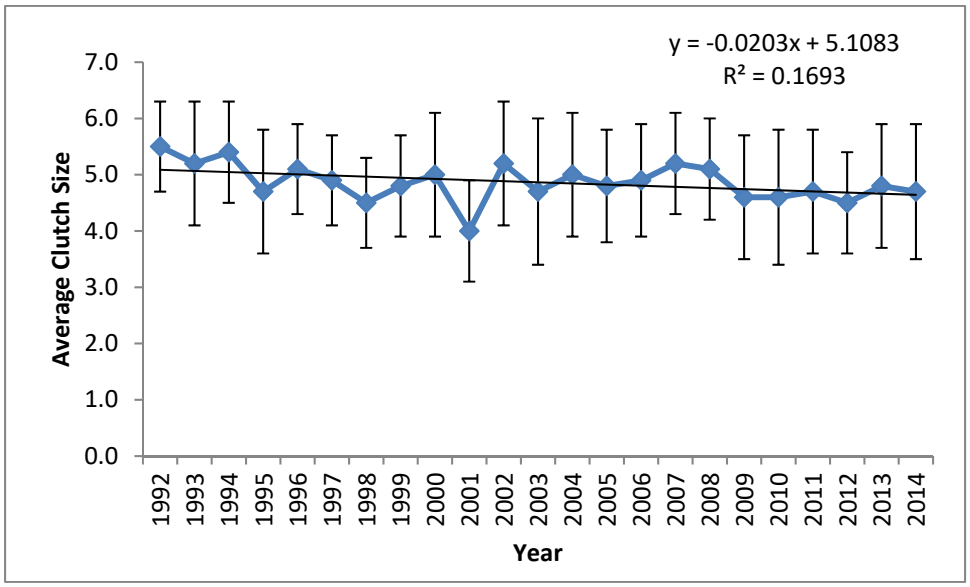

Figure 6. Estimated average clutch size for spectacled eiders at Kigigak Island between 1992 and 2014. Standard deviation is represented with error bars for each year.

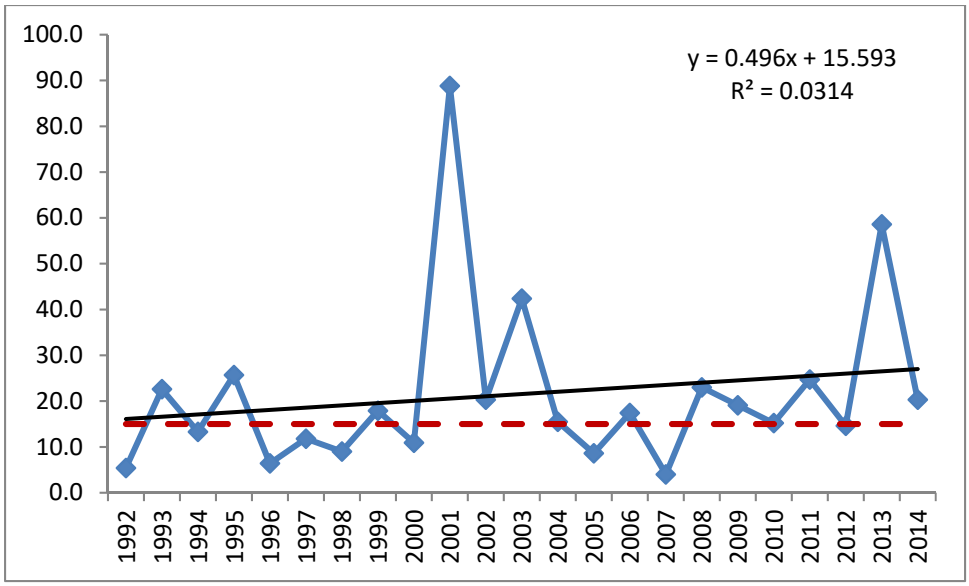

Figure 7. Spectacled eider egg depredation at Kigigak Island from 1992-2014. Years with the highest nest failure occurred in 2001, 2003, and 2013. The solid black line indicates the best-fit trend line which is influenced by the three high failure years. The dark red-dashed line indicates the average percent of eggs depredated (15.3%) excluding the outlier years of 2001, 2003, and 2013.

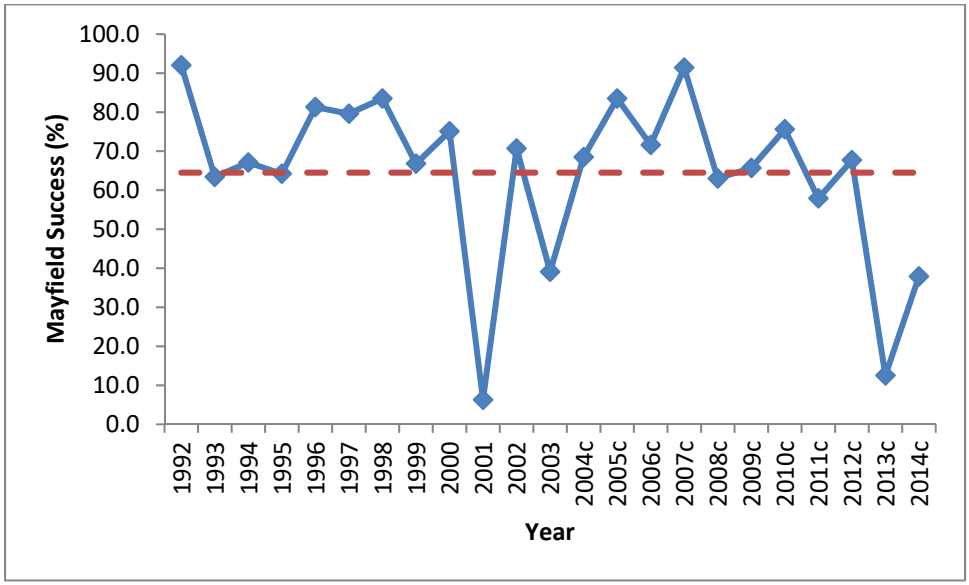

Figure 8. Yearly estimate of Mayfield Nest Success (%) from 1992-2014. Estimates exclude nests whose fates were suspected of being influenced by human impact, specifically trapping. All estimates were calculated using the model of Dinsmore et al. (2002). The red dashed line represents the long-term average (64.5 %).

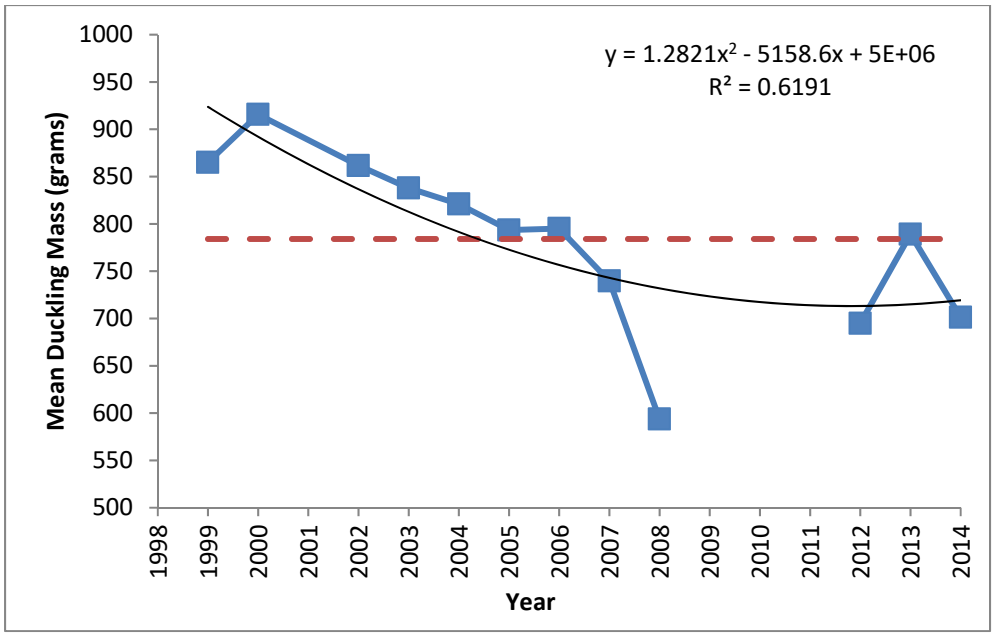

Figure 9. Average body mass (grams) of ducklings at ~34 days of age. Years include 1999-2008, and 2012-2014. The best fit trend line was a polynomial curve with an r^2 value of 0.62 (black line). Red-line represents average body mass of ducklings (784.0 g).

Table 1. Mean clutch size of spectacled eider nests

Year	n	$\bar{X}$	S.D.
1992	64	5.5	0.8
1993	74	5.2	1.1
1994	70	5.4	0.9
1995	92	4.7	1.1
1996	106	5.1	0.8
1997	132	4.9	0.8
1998	104	4.5	0.8
1999	121	4.8	0.9
2000	117	5.0	1.1
2001	22	4.0	0.9
2002	143	5.2	1.1
2003	131	4.7	1.3
2004	147	5.0	1.1
2005	147	4.8	1.0
2006	169	4.9	1.0
2007	180	5.2	0.9
2008	131	5.1	0.9
2009	98	4.6	1.1
2010	118	4.6	1.2
2011	112	4.7	1.1
2012	122	4.5	0.9
2013	92	4.8	1.1
2014	100	4.7	1.2

Table 2. Apparent fate of spectacled eider eggs

			Egg Fate (%)								
Year	Total Eggs	Total Nests	Hatched	Depredated	Abandoned (natural)	Abandoned (human)	Inviable/ Addled	Damaged	Collected	Destroyed/ Dead[b]	Unknown
1992	354	64	76.3	5.4	7.9	0	1.7	0.6	0.8	0	6.8
1993	390	75	62.3	22.6	2.1	2	2.8	1.0	0	0	0
1994	442	84	54.5	13.3	1.8	2	4.8	1.1	0	0	10.4
1995	479	103	52.0	25.7	0.4	0	7.1	2.7	0	0	12.1
1996	594	120	69.7	6.4	4.5	5	5.5	3.4	0	0	10.3
1997	690	147	63.0	11.8	1.3	13	9.9	0	0	0	7.8
1998	480	111	81.9	9.0	0.4	0	4.2	0	0	0	1.0
1999	602	134	73.8	17.9	3.2	3	5.5	1.0	0	0	3.5
2000	587	119	70.5	10.9	0.1	0	9.2	0	0	0	7.2
2001	143	43	7.7	88.8	3.5	4	0	0	0	0	0
2002	744	143	65.3	20.3	0.1	0.7	10.9	1.1	0.5	0	1.6
2003	597	135	40.9	42.4	3.0	0.2	9.5	0	0	0	3.7
2004	754	157	71.6	15.5	1.5	1.1	4.1	0	4.9	0	1.2
2005	674	140	57.4	8.6	3.4	0.6	12.0	0	0	0	18.0
2006	840	174	57.2	17.4	4.2	0	7.0	0.7[a]	0	0	13.5
2007	954	183	63.0	4.0	3.0	0	12.0	1.0[a]	0	0	17.0
2008	698	139	61.0	23.0	2.0	0	9.0	0.4[a]	0	0	4.0
2009	450	98	65.1	19.1	3.8	1.3	4.4	0.7a	0	0	5.6
2010	545	118	61.3	15.2	1.7	3.5	6.2	0.6[a]	0	3.9[c]	7.5
2011	530	112	64.0	24.7	1.9	0.9	4.3	1.1[a]	0	0	3.0
2012	547	122	56.5	14.6	4.0	1.8	2.2	0.4[a]	0	0	20.5
2013	437	92	23.6	58.6	0.0	0.5	0.9	0.5[a]	0	0	16.0
2014	468	100	59.0	20.3	1.7	4.7	2.1	0.4[a]	0	1	11.1

Table 3. Daily survival rate and Mayfield success of spectacled eider nests on Kigigak Island, Yukon Delta National Wildlife Refuge, Alaska

Year	n	DSR[a]	Exposure Days	Apparent Success (%)	Mayfield Success (%)[b]	95% Mayfield C.I.
1992	64	0.997	1043	95.0	92.0	83.5 - 101.2
1993	74	0.984	1025	78.4	63.4	50.4 - 79.5
1994	73	0.986	1099	79.5	67.1	54.6 - 82.4
1995	95	0.985	1451	76.8	64.2	53.1 - 77.5
1996	113	0.993	1969	87.6	81.3	72.8 - 90.8
1997	138	0.992	2429	86.2	79.6	71.7 - 88.4
1998	111	0.994	1770	90.1	83.5	74.8 - 93.1
1999	127	0.986	2102	77.2	66.8	57.5 - 77.6
2000	118	0.990	2038	83.1	75.1	66.0 - 85.4
2001	39	0.909	295.5	7.7	6.3	2.5 - 15.6
2002	136	0.988	2356	76.2	70.7	62.0 - 80.6
2003	131	0.968	2104	48.9	39.1	29.8 - 48.0
2004[c]	154	0.986	---	81.8	68.5	57.2 - 77.5
2005[c]	129	0.994	---	89.1	83.5	72.6 - 89.0
2006[c]	171	0.989	---	81.9	71.6	62.2 - 79.1
2007[c]	173	0.997	---	94.2	91.4	85.0 - 95.3
2008[c]	134	0.984	---	75.0	63.0	52.1 - 72.0
2009[c]	90	0.986	---	75.6	65.7	52.2 - 76.3
2010[c]	98	0.990	---	84.7	75.6	63.3 - 84.2
2011[c]	103	0.981	---	73.8	57.9	45.0 - 68.7
2012[c]	106	0.987	---	86.9	67.7	55.5 - 77.2
2013[c]	75	0.931	---	31.5	12.5	6.2 - 21.3
2014[c]	94	0.969		75.5	37.9	23.2 52.6

Table 4. Average morphological measurements of adult female spectacled eiders on Kigigak Island, Yukon Delta National Wildlife Refuge, Alaska

Year	Weight	SD	Culmen	SD	Tarsus	SD
1993	1191	102.4	25.8	1.9	57.1	1.9
1994	1151	90.3	25.9	1.6	56.1	7.2
1995	1126	79.7	27.5	4.6	55.1	5.2
1996	1154	76.2	26.6	1.5	57.4	2.3
1997	1208	113.9	26.5	1.4	56.6	2.8
1998	1096	158.8	26	1.3	56.9	2.8
1999	1127	86.7	26.9	1.6	56	6
2000	1204	99.5	27.1	1.4	56.8	1.6
2001[a]	1255	351.5	25	1.3	55	2.2
2002	1203	90.9	26.2	5.8	47.2	4.4
2003	1199	91.9	26.8	3.4	49.1	5.9
2004	1217	141.6	27.7	5.9	55.1	8.2
2005	1171	124.9	28	6	55.3	7.2
2006	1193	107.9	26.6	2.1	57.3	2.6
2007	1186	81.5	26.1	2.1	56.3	1.7
2008	1166	103.6	25.8	1.5	55.6	1.6
2009						
2010						
2011						
2012	1145	72.8	24.7	4	54.5	5.6
2013	1239	83.9	24.8	2	54.3	2.6
2014	1202	94.7	25.4	1.4	55.9	1.4