

APPENDIX F: LUNA BREEDING AREA SUMMARIES

Table 24. Observed human activity and bald eagle behavior. Luna BA, Arizona, 1999.

| Type | N ¹ | W | R | F | L | X | B | U | Total |
|---------------|----------------|----|----|----|----|----|----|----|------------|
| Hiker | 1 | 7 | -- | -- | 1 | -- | 3 | -- | 12 (31.6%) |
| Helicopter | 2 | -- | -- | 1 | -- | -- | 2 | 1 | 6 (15.8%) |
| Jets | -- | 2 | -- | -- | -- | -- | -- | 4 | 6 (15.8%) |
| Agency Worker | 2 | -- | -- | 2 | -- | -- | -- | -- | 4 (10.5%) |
| Nestwatcher | -- | 2 | -- | -- | 1 | 1 | -- | -- | 4 (10.5%) |
| Fisherman | -- | 2 | 1 | -- | -- | -- | -- | -- | 3 (7.9%) |
| Birder | -- | 1 | -- | -- | -- | -- | -- | -- | 1 (2.6%) |
| Driver | -- | -- | -- | -- | 1 | -- | -- | -- | 1 (2.6%) |
| Boater | -- | -- | -- | -- | -- | -- | 1 | -- | 1 (2.6%) |
| Total | 5 | 14 | 1 | 3 | 3 | 1 | 6 | 5 | 38 |

¹ Bald eagle behavior, N=none, W=watched, R=restless, F=flushed, L=left area, X=other (no explanation offered), B=bird not in area, U=unknown.

Table 25. Observed forage event and success. Luna BA, Arizona, 1999.

| Sex | Fish | | Birds | | Total | |
|---------|----------------|-------------------|-------|------|-------|-------|
| | E ¹ | S ² -U | E | S-U | E | S-U |
| Male | 22 | 14-8 | 11 | 2-9 | 33 | 16-17 |
| Female | 14 | 10-4 | 4 | 1-3 | 18 | 11-7 |
| Unknown | 11 | 11-0 | 5 | 2-3 | 16 | 13-3 |
| Total | 47 | 35-12 | 20 | 5-15 | 67 | 40-27 |

¹ E=A Single forage event, not the number of attempts during one attempt.

² S-U=Successful – Unsuccessful forage events.

Table 26. Observed prey types delivered to the nest. Luna BA, Arizona, 1999.

| Sex | Fish | Birds | Unknown | Total |
|---------|------------|-----------|-----------|-----------|
| Male | 4 | -- | 2 | 6 (40.0%) |
| Female | 4 | 1 | 1 | 6 (40.0%) |
| Unknown | 2 | 1 | -- | 3 (20.0%) |
| Total | 10 (66.7%) | 2 (13.3%) | 3 (20.0%) | 15 |

Table 27. Observed human activity and bald eagle behavior. Luna BA, Arizona, 2000.

| Type | N ¹ | W | F | B | Total |
|---------------|----------------|----|----|----|-----------|
| Hiker | 5 | -- | 1 | -- | 6 (46.2%) |
| Agency Worker | -- | 1 | 2 | -- | 3 (23.1%) |
| Jets | 3 | -- | -- | -- | 3 (23.1%) |
| Construction | -- | -- | -- | 1 | 1 (7.7%) |
| Total | 8 | 1 | 3 | 1 | 13 |

¹ Bald eagle behavior, N=none, W=watched, F=flushed, B=bird not in area.

Table 28. Observed forage event and success, Luna BA, Arizona, 2000.

| Sex | Fish | | Mammals | | Unknown | | Total | |
|---------|----------------|-------------------|---------|-----|---------|-----|-------|------|
| | E ¹ | S ² -U | E | S-U | E | S-U | E | S-U |
| Male | 4 | 1-3 | 1 | 0-1 | -- | -- | 5 | 1-4 |
| Female | 3 | 2-1 | -- | -- | -- | -- | 3 | 2-1 |
| Unknown | 6 | 6-0 | -- | -- | 1 | 1-0 | 7 | 7-0 |
| Total | 13 | 9-4 | 1 | 0-1 | 1 | 1-0 | 15 | 10-5 |

¹ E=A Single forage event, not the number of attempts during one attempt.
² S-U=Successful - Unsuccessful forage events.

Table 29. Observed prey types delivered to the nest, Luna BA, Arizona, 2000.

| Sex | Fish | Birds | Unknown | Total |
|---------|------------|----------|-----------|------------|
| Male | 2 | -- | -- | 2 (14.3%) |
| Female | 1 | -- | 1 | 2 (14.3%) |
| Unknown | 7 | 1 | 2 | 10 (71.4%) |
| Total | 10 (71.4%) | 1 (7.1%) | 3 (21.4%) | 14 |

¹ Bald eagle behavior: N=none, W=watched, R=restless, F=flushed, X=other (a=alerted light path, b=increased with great blue heron), B=bird not in area, U=unknown.

Table 31. Observed watercraft use, Luna BA, Arizona, 1999.

| Type | Waterscraft | | Total |
|-------------|-------------|-------------|-------|
| | 4:00 - 5:00 | 5:00 - 6:00 | |
| Tub | 324 | 1473 | 1812 |
| Canoe/Kayak | 337 | 18 | 375 |
| Raft | 183 | 7 | 194 |
| Boat | 2 | -- | 2 |
| Total | 826 | 1478 | 2699 |

Table 32. Observed helicopter activity and bald eagle behavior, Luna BA, Arizona, 1999.

| Type | N | W | R | F | X | B | U | Total |
|----------|----|----|----|----|----|----|---|-------------|
| Civilian | 38 | 47 | 1 | 1 | 14 | 13 | 6 | 107 (24.1%) |
| Military | 23 | 39 | -- | -- | -- | 7 | 1 | 68 (28.1%) |
| Search | 4 | 3 | 1 | 2 | -- | 3 | 1 | 14 (2.7%) |
| News | 1 | 3 | -- | -- | -- | -- | 1 | 5 (2.0%) |
| Total | 66 | 94 | 2 | 3 | 14 | 19 | 9 | 194 |

¹ Bald eagle behavior: N=none, W=watched, R=restless, F=flushed, X=other (a=increased with great blue heron), B=bird not in area, U=unknown.

APPENDIX G: ORME BREEDING AREA SUMMARIES

Table 30. Observed human activity and bald eagle behavior, Orme BA, Arizona, 1999.

| Type | N ¹ | W | R | F | X | B | U | Total |
|------------------|----------------|-----|----|----|----|-----|----|-------------|
| Small Plane | 248 | 42 | -- | 2 | -- | 53 | 14 | 359 (42.9%) |
| Helicopter | 66 | 94 | 2 | 3 | 1a | 19 | 9 | 194 (23.2%) |
| Raft/Canoe/Kayak | 122 | 28 | -- | 6 | 1b | 23 | 3 | 183 (21.9%) |
| Tuber | 31 | 10 | -- | -- | -- | 16 | -- | 57 (6.8%) |
| Fisherman | 12 | 1 | -- | 1 | -- | -- | -- | 14 (1.7%) |
| Swimmer | 6 | 3 | -- | -- | -- | 2 | -- | 11 (1.3%) |
| Driver | 2 | 1 | -- | -- | -- | -- | -- | 3 (0.4%) |
| Boater | -- | 2 | -- | -- | -- | -- | -- | 2 (0.2%) |
| Dog | 2 | -- | -- | -- | -- | -- | -- | 2 (0.2%) |
| Hiker | 1 | -- | -- | 1 | -- | -- | -- | 2 (0.2%) |
| Horseback Rider | 1 | 1 | -- | -- | -- | -- | -- | 2 (0.2%) |
| Gunshots | -- | -- | -- | -- | -- | -- | 1 | 1 (0.1%) |
| Jets | 1 | -- | -- | -- | -- | -- | -- | 1 (0.1%) |
| OHV | -- | 1 | -- | -- | -- | -- | -- | 1 (0.1%) |
| Rancher | 1 | -- | -- | -- | -- | -- | -- | 1 (0.1%) |
| Researcher | -- | -- | -- | 1 | -- | -- | -- | 1 (0.1%) |
| Total | 493 | 183 | 2 | 14 | 2 | 115 | 28 | 837 |

¹ Bald eagle behavior, N=none, W=watched, R=restless, F=flushed, X=other (a=altered flight path, b=interacted with great blue heron), B=bird not in area, U=unknown.

Table 31. Observed watercraft use, Orme BA, Arizona, 1999.

| Type | Watercraft | | | | People | | | |
|-------------|-------------|-----------|---------|-------|-------------|-----------|---------|-------|
| | 4/29 – 5/28 | 5/29 - 31 | 6/4 - 5 | Total | 4/29 – 5/28 | 5/29 - 31 | 6/4 - 5 | Total |
| Tuber | 334 | 14751 | 1037 | 16122 | 334 | 14751 | 1037 | 16122 |
| Canoe/Kayak | 337 | 20 | 18 | 375 | 547 | 34 | 25 | 606 |
| Raft | 183 | 7 | 4 | 194 | 1429 | 51 | 34 | 1514 |
| Boat | 2 | -- | -- | 2 | 3 | -- | -- | 3 |
| Total | 856 | 14778 | 1059 | 16693 | 2313 | 14836 | 1096 | 18245 |

Table 32. Observed helicopter activity and bald eagle behavior, Orme BA, Arizona, 1999.

| Type | N ¹ | W | R | F | X | B | U | Total |
|----------|----------------|----|----|----|----|----|---|-------------|
| Civilian | 36 | 47 | 1 | 1 | 1a | 13 | 6 | 105 (54.1%) |
| Military | 25 | 39 | -- | -- | -- | 3 | 1 | 68 (35.1%) |
| Sheriff | 4 | 5 | 1 | 2 | -- | 3 | 1 | 16 (8.2%) |
| News | 1 | 3 | -- | -- | -- | -- | 1 | 5 (2.6%) |
| Total | 66 | 94 | 2 | 3 | 1 | 19 | 9 | 194 |

¹ Bald eagle behavior, N=none, W=watched, R=restless, F=flushed, X=other (a=interacted with great blue heron), B=bird not in area, U=unknown.

Table 33. Observed forage event and success. Orme BA, Arizona, 1999.

| Sex | Fish | | Unknown | | Total | |
|--------|----------------|-------------------|---------|-----|-------|-----|
| | E ¹ | S ² -U | E | S-U | E | S-U |
| Male | 2 | 2-0 | 1 | 1-0 | 3 | 3-0 |
| Female | 4 | 4-0 | -- | -- | 4 | 4-0 |
| Total | 6 | 6-0 | 1 | 1-0 | 7 | 7-0 |

¹ E=A Single forage event, not the number of attempts during one attempt.

² S-U=Successful – Unsuccessful forage events.

Table 34. Observed prey types delivered to the nest. Orme BA, Arizona, 1999.

| Sex | Fish | Birds | Mammals | Reptile | Unknown | Total |
|--------|------------|----------|----------|----------|----------|------------|
| Male | 15 | 2 | 2 | -- | 5 | 24 (39.3%) |
| Female | 35 | -- | -- | 1 | 1 | 37 (60.7%) |
| Total | 50 (82.0%) | 2 (3.3%) | 2 (3.3%) | 1 (1.6%) | 6 (9.8%) | 61 |

Table 35. Observed human activity and bald eagle behavior. Orme BA, Arizona, 2000.

| Type | N ¹ | W | F | Total |
|-----------------|----------------|-----|----|-------------|
| Small Plane | 189 | 56 | 1 | 246 (53.9%) |
| Helicopter | 51 | 47 | 1 | 99 (21.7%) |
| Driver | 30 | 5 | 5 | 40 (8.8%) |
| Hiker | 20 | 1 | 1 | 22 (4.8%) |
| Shooter | 13 | 1 | -- | 14 (3.1%) |
| OHV | 10 | 2 | -- | 12 (2.6%) |
| Horseback Rider | 3 | 2 | -- | 5 (1.1%) |
| Construction | 4 | -- | 1 | 5 (1.1%) |
| Fisherman | 4 | -- | -- | 4 (0.9%) |
| Picnicker | 2 | -- | -- | 2 (0.4%) |
| Swimmer | 2 | -- | -- | 2 (0.4%) |
| Researcher | -- | -- | 1 | 1 (0.2%) |
| Mining | 1 | -- | -- | 1 (0.2%) |
| Cycler | 1 | -- | -- | 1 (0.2%) |
| Jets | -- | 1 | -- | 1 (0.2%) |
| Photographer | 1 | -- | -- | 1 (0.2%) |
| Total | 331 | 115 | 10 | 456 |

¹ Bald eagle behavior, N=none, W=watched, F=flushed.

Table 36. Observed aircraft activity and bald eagle behavior, Orme BA, Arizona, 2000.

| Type | N ¹ | W | R | F | B | U | Total |
|----------------------|----------------|-----|----|----|----|----|-------------|
| Unknown plane | 177 | 49 | 1 | -- | 5 | 2 | 234 (63.4%) |
| WW II plane | 12 | 7 | -- | 1 | -- | -- | 20 (5.4%) |
| Unknown helicopter | 31 | 23 | 1 | -- | -- | 1 | 56 (15.2%) |
| Apache helicopter | 14 | 14 | -- | -- | -- | 1 | 29 (7.9%) |
| Sheriff's helicopter | 6 | 10 | -- | -- | -- | -- | 16 (4.3%) |
| Total | 240 | 103 | 2 | 1 | 5 | 4 | 355 |

¹ Bald eagle behavior, N=none, W=watched, R=restless, F=flushed, B=bird not in area, U=unknown.

Table 37. Observed prey types delivered to the nest, Orme BA, Arizona, 2000.

| Sex | Fish | Birds | Mammals | Unknown | Total |
|---------|-----------|-----------|----------|-----------|------------|
| Male | 6 | 1 | -- | 3 | 10 (76.9%) |
| Female | 1 | -- | -- | -- | 1 (7.7%) |
| Unknown | -- | 1 | 1 | -- | 2 (15.4%) |
| Total | 7 (53.8%) | 2 (15.4%) | 1 (7.7%) | 3 (23.1%) | 13 |

¹ Bald eagle behavior, N=none, W=watched, F=flushed

APPENDIX H: PLEASANT BREEDING AREA SUMMARIES

Table 38. Observed human activity and bald eagle behavior. Pleasant BA, Arizona, 1999.

| Type | N ¹ | W | R | F | L | X | U | D-D ² | Total | Total |
|--------------|----------------|-----|----|----|----|----|----|------------------|-------------|-------|
| Boats | 108 | 62 | 10 | 1 | -- | 7 | 31 | 151 | 219 (45.7%) | |
| Small Plane | 72 | 15 | 12 | 1 | 1 | 4 | 27 | 87 | 132 (27.6%) | |
| Agency Boats | 25 | 20 | 2 | 1 | -- | 2 | 5 | 36 | 55 (11.5%) | |
| Jet-Ski | 9 | 5 | 5 | 2 | -- | 3 | 2 | 17 | 26 (5.4%) | |
| Helicopter | 7 | 3 | 6 | -- | -- | 2 | 4 | 11 | 22 (4.6%) | |
| Jets | 2 | -- | 14 | -- | -- | 1 | 1 | 5 | 18 (3.8%) | |
| Fisherman | 1 | -- | -- | -- | -- | -- | -- | 1 | 1 (0.2%) | |
| Ultralight | 1 | 2 | 1 | -- | -- | -- | 2 | 4 | 6 (1.3%) | |
| Total | 225 | 107 | 50 | 5 | 1 | 19 | 72 | 313 | 479 | |

¹ Bald eagle behavior, N=none, W=watched, R=restless, F=flushed, L=left area. X=other (no explanation offered), U=unknown.

² D-D Total=Observations on dawn-to-dusk days.

Table 39. Watercraft compliance at the southern closure boundary. Pleasant BA, Arizona, 1999.

| Date | Boats at Closure | Boats in Closure | Agency Boats in Closure | Jet Skis at Closure | Jet Skies in Closure | Total |
|-------------|------------------|------------------|-------------------------|---------------------|----------------------|-------|
| 2/7 – 14 | 262 | 22 | 9 | 24 | 2 | 319 |
| 2/19 – 28 | 863 | 34 | 6 | 98 | 3 | 1004 |
| 3/5 – 14 | 847 | 38 | 9 | 61 | 1 | 956 |
| 3/19 – 28 | 1241 | 37 | 5 | 127 | 9 | 1419 |
| 4/2 – 11 | 729 | 15 | 11 | 39 | -- | 794 |
| 4/16 – 25 | 1371 | 34 | 9 | 204 | 6 | 1624 |
| 4/31 – 5/9 | 1842 | 27 | 10 | 438 | 6 | 2323 |
| 5/11 – 5/12 | 95 | 3 | -- | 34 | 1 | 133 |
| Total | 7250 (84.5%) | 210 (2.4%) | 59 (0.7%) | 1025 (11.9%) | 28 (0.3%) | 8572 |

Table 40. Observed forage event and success. Pleasant BA, Arizona, 1999.

| Sex | Fish | | Birds | | Unknown | | Total | |
|---------|----------------|-------------------|-------|-----|---------|-----|-------|-------|
| | E ¹ | S ² -U | E | S-U | E | S-U | E | S-U |
| Male | 19 | 13-6 | 5 | 4-1 | 7 | 1-6 | 31 | 18-13 |
| Female | -- | -- | 2 | 1-1 | 4 | 1-3 | 6 | 2-4 |
| Unknown | 1 | 1-0 | -- | -- | -- | -- | 1 | 1-0 |
| Total | 20 | 14-6 | 7 | 5-2 | 11 | 2-9 | 38 | 21-17 |

¹ E=A Single forage event, not the number of attempts during one attempt.

² S-U=Successful – Unsuccessful forage events.

Table 41. Observed prey types delivered to the nest, Pleasant BA, Arizona, 1999.

| Sex | Fish | Birds | Mammals | Reptile | Unknown | Total |
|--------------|-------------------|------------------|-----------------|-----------------|-------------------|------------|
| Male | 40 | 9 | 1 | 1 | 11 | 62 (86.1%) |
| Female | 3 | -- | 1 | -- | 4 | 8 (11.1%) |
| Unknown | -- | -- | 1 | -- | 1 | 2 (2.8%) |
| Total | 43 (59.7%) | 9 (12.5%) | 3 (4.2%) | 1 (1.4%) | 16 (22.2%) | 72 |

Table 42. Observed human activity and bald eagle behavior, Pleasant BA, Arizona, 2000.

| Type | N ¹ | W | R | U | Total |
|--------------|----------------|------------|-----------|------------|-------------|
| Boats | 156 | 70 | 13 | 50 | 289 (40.1%) |
| Small Plane | 140 | 15 | 4 | 90 | 249 (34.6%) |
| Agency Boats | 41 | 33 | 3 | 14 | 91 (12.6%) |
| Jet-Ski | 20 | 18 | -- | 15 | 53 (7.4%) |
| Helicopter | 7 | -- | 2 | 7 | 16 (2.2%) |
| Jets | 3 | 4 | 1 | 5 | 13 (1.8%) |
| Ultralight | 3 | -- | 1 | 3 | 7 (1.0%) |
| Waterskier | -- | -- | 1 | -- | 1 (0.1%) |
| Sailboat | 1 | -- | -- | -- | 1 (0.1%) |
| Total | 371 | 140 | 25 | 184 | 720 |

¹ Bald eagle behavior, N=none, W=watched, R=restless, U=unknown.

Table 43. Watercraft compliance at the southern closure boundary, Pleasant BA, Arizona, 2000.

| Date | Boats at Closure | Boats in Closure | Agency Boats in Closure | Jet Skis at Closure | Jet Skies in Closure | Total |
|--------------|---------------------|-------------------|-------------------------|---------------------|----------------------|-------------|
| 2/5 – 13 | 489 | 23 | 5 | 33 | 4 | 554 |
| 2/18 – 27 | 578 | 24 | 9 | 60 | -- | 671 |
| 3/3 – 12 | 564 | 40 | 3 | 46 | 5 | 658 |
| 3/17 – 26 | 1302 | 41 | 14 | 120 | 6 | 1483 |
| 3/31 – 4/9 | 987 | 51 | 11 | 158 | 7 | 1214 |
| 4/14 – 23 | 750 | 48 | 8 | 119 | 11 | 936 |
| 4/28 – 5/9 | 675 | 39 | 13 | 166 | 21 | 914 |
| 5/12 – 5/27 | 1080 | 42 | 20 | 205 | 17 | 1364 |
| Total | 6425 (82.4%) | 308 (4.0%) | 83 (1.1%) | 907 (11.6%) | 71 (0.9%) | 7794 |

Table 44. Observed forage event and success, Pleasant BA, Arizona, 2000.

| Sex | Fish | | Birds | | Unknown | | Total | |
|--------------|----------------|-------------------|----------|------------|----------|------------|-----------|------------|
| | E ¹ | S ² -U | E | S-U | E | S-U | E | S-U |
| Male | 5 | 5-0 | -- | -- | -- | -- | 5 | 5-0 |
| Female | 3 | 2-1 | 1 | 0-1 | 1 | 0-1 | 5 | 2-3 |
| Unknown | 2 | 2-0 | -- | -- | -- | -- | 2 | 2-0 |
| Total | 10 | 9-1 | 1 | 0-1 | 1 | 0-1 | 12 | 9-3 |

¹ E=A Single forage event, not the number of attempts during one attempt.

² S-U=Successful – Unsuccessful forage events.