

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p> <p>Used mortality data to draw population inferences on rare species; species' migration dates, length of migration, etc. Figures 1 and 2 provide detailed information pertaining to mortalities recorded during migration months. Table 4 summarizes species that appear to be in decline as they pertain to tower mortalities.</p> <p>Author lists factors that all contribute to mortality events (i.e., mass kills).</p> <ol style="list-style-type: none"> 1) Time of year (mid-Aug to mid-Oct and mid-May). 2) Tail winds. 3) Clear weather where and when birds take off that night. 4) Intercepted by weather fronts. 5) If precipitation occurs early in the evening; birds will not take off for nocturnal flights. 6) Towers 400 feet or greater. 7) Ground easily observable for surveyors to find carcasses and determine extent of mortality. 8) The taller the tower the more dispersed the carcasses.
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p> <p>Are additional studies identified? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes explain and list studies.</p> <p>Recommends experiment w/ mitigation methods.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p> <p>Are specific methods identified? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes explain and list specific mitigative methods.</p> <ol style="list-style-type: none"> 1. Tower dismantling. 2. No towers over 300 feet. 3. Illuminate towers w/ floodlights. 4. Use moving lights or strobe lights. 5. Fluorescent tape on guy wires to increase wire visibility. 6. Turn off lights @ critical times (problems with FAA regulations).

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Johnston, D. W. and T. P. Haines. 1957. Analysis of mass bird mortality in October 1954. Auk 74:447-458.	
Source Type (check one): Incidental Report.	
Peer-reviewed Paper <input checked="" type="checkbox"/> Other (specify): Agency Report _____ Conference Proceedings _____	
II. Study Objectives (list)	
N/A	
III. Species	
Summary of kills reported @ broadcasting/TV towers, airport ceillometers, and tall buildings w/ advancing cold fronts.	
IV. Study Methods (briefly list)	
N/A	
V. Duration of Study 4 days	
Duration (provide dates): Single Year <u>1954</u> Multiple Years _____ 5-8 Oct 1954; 25 reported kills (25 locations) from NY to S. Atlantic states.	Seasons: Spring Migration _____ Both _____ Fall Migration <input checked="" type="checkbox"/> Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input checked="" type="checkbox"/>
Other Periods (Describe): 4 days
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
No details provided.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 8 Proximity:
IX. Behavioral Observations at the Tower: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Within ceilometers (ceiling @ 800 ft), birds fluttering w/in the beam; others on level flight through beam.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Cold front N to S. Precise role of each climatic condition not determined.

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes ___ No <input checked="" type="checkbox"/></p> <p>Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p> <p>Total estimated mortalities = 106,804 5-8 Oct @ 25 locations. 5-6 Oct = 2,756 birds/ 61 species @ 5 northern locals. 6-7 Oct = 4, 478 birds/ 51 species @ 10 southern locals. 7-8 Oct = 99,340 birds/68 species @ 11 southernmost locals. High number of kills reported @ ceilometers (15 incidents). 8 incidents @ communication towers (200-1,060 feet) Higher number of kills in southern states as compared to northern states. At Warner Robins AFB, birds flying straight down into ceilometer beam "bouncing off" concrete runway (estimated 50,000 birds killed; 2,552 examined).</p> <p>Authors present strong argument for light attraction. However, suggested reduced attraction to lights @ communication towers or else a higher number of bird mortalities at the tower sites would have occurred. Extensive species list = inferring behavior commonalities among species.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p> <p>Are additional studies identified? Yes ___ No <input checked="" type="checkbox"/> If yes explain and list studies.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p> <p>Are specific methods identified? Yes ___ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Herndon, L.R. 1973. Bird kill on Holston Mountain. Migrant 44(1):1-4.	
Source Type (check one): Incidental Report.	
Peer-reviewed Paper <input checked="" type="checkbox"/> Other (specify): Agency Report <input type="checkbox"/> Conference Proceedings <input type="checkbox"/>	
II. Study Objectives (list)	
Reported 1 night kill @ 4 towers and 2 buildings.	
III. Species	
WCXB-TV = 402 birds on 1 Oct; 180 on 2 Oct 1972. Radar Station = 349 bird kills 1 Oct; 850 on 2 Oct 1972. Total = 1,801 birds, 44 species. Most all birds found SE of tower (NW wind). 27 of 37 warbler species documented in bird mortalities (73% of state species).	
IV. Study Methods (briefly list)	
Variety of collection, identification, and reporting techniques.	
V. Duration of Study 1 night	
Duration (provide dates): Single Year 30 Sep 1972 Multiple Years _____ (Carcasses retrieved on 1 Oct w/ some additional retrieval on 2 Oct.)	Seasons: Spring Migration _____ Both _____ Fall Migration <input checked="" type="checkbox"/> Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)	
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>	
Other Periods (Describe): See Section V.	
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
VII. Analytical and Statistical Methods	
Statistical method(s) used: (list)	
N/A	
Comments:	
VIII. Number of Tower Sites: 2+ Proximity:	
WCYB-TV = 2 towers; 1 building. One tower = 125 feet (tallest of two towers); guyed. Elizabethton, TN Floodlights. On mountain (2) ≈ 85 feet tall; ? guy wires Domed building = weather radar: WJHL-TV, WKPT-TV (? ht ?)	
IX. Behavioral Observations at the Tower: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.	
Same birds hitting building windows, floodlights, and dome on weather radar building.	
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.	
Airport: 20:00 hours = cloud ceiling = 4,000 feet; NW winds 5 mph, visibility = 15 miles. 22:00 hours = ceiling risen to 5,000 feet. 23:00 hours = clear w/ NW wind @ 8 mph. Holston Mt = 4,300 feet; fogged in during this period.	

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes ____ No <input checked="" type="checkbox"/></p> <p>Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p>
<p>Some mortalities at 22:00 w/ lighted windows of building and floodlights along NE corner of building; 0 mortalities @ NW corner.</p> <p>30 Sep 1972, annual fall bird counts = poor representation of species (e.g., warblers, ovenbird). Only 21 warbler species (57%) of state's 37 warbler species and 0 ovenbirds seen during the day during the annual bird count. However, that night 27 warbler species (73% of state's warblers and 303 (17% of kill) ovenbirds were reported bird mortalities at the tower. Additional insight into local migration patterns that were not apparent from annual population surveys.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p>
<p>Are additional studies identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list studies.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p>
<p>Are specific methods identified? Yes ____ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Gauthreaux, S.A., Jr. and C.G. Belser. 2000. The behavioral responses of migrating birds to different lighting systems on tall towers. Avian mortality at communication towers. Transcripts of Proceedings of the Workshop on Avian Mortality at Communication Towers, August 11, 1999, Cornell University, Ithaca, NY. http://migratorybirds.fws.gov/issues/towers/agenda/html	
Source Type (check one): Study.	
Peer-reviewed Paper <input type="checkbox"/>	Other (specify):
Agency Report <input type="checkbox"/>	
Conference Proceedings <input checked="" type="checkbox"/>	
II. Study Objectives (list)	
Determine influences of both red and white lights on the flight and orientation behavior of nocturnally migrating birds.	
III. Species	
Not listed in abstract.	
IV. Study Methods (briefly list)	
Compared the number and behavior of nocturnal migrants near strobe-lit radio tower against control site during spring migration. Compared the number and behavior of nocturnal migrants near red-lit TV tower, white strobe-lit TV tower and control site during fall migration.	
V. Duration of Study	
Duration (provide dates): Single Year <u>9 evenings = spring, 14 evenings = fall</u> Multiple Years _____	Seasons: Spring Migration <input checked="" type="checkbox"/> Both _____ Fall Migration <input checked="" type="checkbox"/> Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): See Section V.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Abstract contained little methodology information.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
Unknown.
Comments:
VIII. Number of Tower Sites: 3 ? Proximity: Unknown
IX. Behavioral Observations at the Tower: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Number of birds at each site were not significantly different; but proportion of curved, circling, or hovering behavior <u>was</u> significantly higher at red-lit tower than strobe-lit tower and control. Also higher at strobe-lit towers when compared to control site both spring and fall.
X. Documentation of Weather Factors? Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown ? Describe if applicable to statement or conclusion being evaluated.

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes ___ No ___ Unknown.</p> <p>Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p> <p>Using an image intensifier, coded flight behavior:</p> <p>1) linear flight (straight)</p> <p>2) nonlinear flight (pause-hover, curved, or circling)</p> <p>Spring = number of birds were not significantly different, but numbers showing nonlinear flight at strobe-lit tower were significantly higher than at control site.</p> <p>Fall = number of birds were not significantly different b/w white strobe and control site; numbers significantly higher at red light than white strobe or control site; numbers w/ nonlinear flight were significantly higher at red than white strobe towers. White strobe was significantly higher than at control site.</p> <p>Birds in linear flight were at the tower only briefly and leave area.</p> <p>Birds w/ curved, circling, or hovering behavior showed increased time at the tower w/ an increase in bird concentrations. Hazards w/ colliding w/ other birds in addition to tower and guy wires.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p> <p>Are additional studies identified? Yes ___ No ___ If yes explain and list studies.</p> <p>Unknown.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p> <p>Are specific methods identified? Yes ___ No ___ If yes explain and list specific mitigative methods.</p> <p>Unknown.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Elmore, J.B. Jr. and B. Palmer-Ball Jr. 1991. Mortality of migrant birds at two central Kentucky TV towers. Kentucky Warbler 67:67-71.	
Source Type (check one): Incidental report.	
Peer-reviewed Paper <input checked="" type="checkbox"/> Other (specify): Agency Report _____ Conference Proceedings _____	
II. Study Objectives (list)	
Sporadically recorded species and number of bird mortalities.	
III. Species Studied (list)	
72 species. Mass kills: WGRB = 8 May 1983 (55 birds/16 species), 14 May 1983 (62 birds/16 species), 11 Oct 1986 (113 birds/35 species), 17 Oct 1990 (1,576+ birds/59 species). WAVE = 20 Oct 1990 (133 birds/36 species).	
IV. Study Methods (briefly list)	
Infrequent surveys.	
V. Duration of Study WGRB = 8 years WAVE = ?	
Duration (provide dates): Single Year _____ Multiple Years <u>Sporadic</u> WGRB = 1983-1990 WAVE = ?	Seasons: Spring Migration _____ Both <input checked="" type="checkbox"/> Fall Migration _____ Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (If applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): Sporadic
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Brief Description of Area/Tower:
Predator and scavenger activity noted, but not calculated or estimated.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 2 Proximity: Unknown
1)WGRB - Aclair Co, Kentucky. 1,000 feet; guyed. Lighting? 2)WAVE - Oldham Co, Kentucky. 1,739 feet; guyed.
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Many surveys followed inclement weather.

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Crawford, R.L. 1981. Bird casualties at a Leon County, Florida TV tower: a 25-year migration study. Bulletin of Tall Timbers Research Station 22:1-30.	
Source Type (check one): Study	
Peer-reviewed Paper <input checked="" type="checkbox"/>	Other (specify):
Agency Report <input type="checkbox"/>	
Conference Proceedings <input type="checkbox"/>	
II. Study Objectives (list)	
Summarized 25 years of studies on avian collisions with communication towers at the Tall Timbers Research Station.	
III. Species Studied (list)	
Total 42,384 bird mortalities recorded; 189 species.	
IV. Study Methods (briefly list)	
Daily searches; extensive use of carcasses for scientific research.	
V. Duration of Study 25 years	
Duration (provide dates): Single Year _____ Multiple Years <u>1955-1980</u>	Seasons: Spring Migration _____ Both _____ Fall Migration _____ Yearlong <input checked="" type="checkbox"/>

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)	
Search Conditions: Daily <input checked="" type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>	
Other Periods (Describe):	
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Scavenger	
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Predator Scavenger removal program implemented. See Crawford and Engstrom, 2001.	
VII. Analytical and Statistical Methods	
Statistical method(s) used: (list)	
N/A	
Comments:	
VIII. Number of Tower Sites: 1 Proximity:	
See Crawford and Engstrom, 2001).	
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.	
X. Documentation of Weather Factors? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.	
Not reported as part of this study summary, but some weather conditions were recorded over the 25-year history.	

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.</p>
<p>35 acres mowed; 4000-acre Lake Iamonia ~1 mile S of tower (waterfowl and water bird accounts).</p>
<p>XII. Brief Description of Results</p>
<p>See Section III and general reference to 25 years of studies.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p>
<p>Are additional studies identified? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes explain and list studies.</p>
<p>Ongoing studies at Tall Timbers Research Station although predator control will not occur.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p>
<p>Are specific methods identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Crawford, R.L. 1981. Bird kills at a lighted man-made structure: often on nights close to a full moon. Am. Birds 35:913-914.	
Source Type (check one): Study	
Peer-reviewed Paper <input checked="" type="checkbox"/>	Other (specify):
Agency Report <input type="checkbox"/>	
Conference Proceedings <input type="checkbox"/>	
II. Study Objectives (list)	
Compared mortality data to moon phase.	
III. Species Studied (list)	
3,223 birds; 57 species. Mass mortalities see Crawford 1978 summary.	
IV. Study Methods (briefly list)	
Searches almost daily. Plotted moon fraction illumination to number of birds killed.	
V. Duration of Study 3 years	
Duration (provide dates): Single Year _____ Multiple Years <u>1973-1975</u>	Seasons: Spring Migration _____ Both _____ Fall Migration _____ Yearlong <input checked="" type="checkbox"/>

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input checked="" type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe):
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Scavenger
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Predator Scavenger removal program implemented. See Crawford and Engstrom, 2001.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
Regression; Chi-squared tests.
Comments:
VIII. Number of Tower Sites: 1 Proximity:
1,008-foot tower (see Crawford and Engstrom, 2001).
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
X. Documentation of Weather Factors? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Yes = study; no = summary.

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes ___ No <input checked="" type="checkbox"/></p> <p>Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p> <p>States that moon phase is not related to avian kills. Weather patterns and migration numbers appear to be more relevant.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p> <p>Are additional studies identified? Yes ___ No <input checked="" type="checkbox"/> If yes explain and list studies.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p> <p>Are specific methods identified? Yes ___ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Taylor, W.K. and B.H. Anderson. 1973. Nocturnal migrants killed at a south central Florida TV tower, autumn 1969-1971. <i>Wilson Bulletin</i> 85(1):42-51.	
Source Type (check one): Study.	
Peer-reviewed Paper <input checked="" type="checkbox"/>	Other (specify):
Agency Report <input type="checkbox"/>	
Conference Proceedings <input type="checkbox"/>	
II. Study Objectives (list)	
To record number of birds and species killed @ tower site.	
III. Species	
7,782 birds; 82 species <u>Mass Mortalities:</u> 29 Sep 1970 (1,592) (37 species) 30 Sep 1970 (859) (31 species)	
IV. Study Methods (briefly list)	
Early a.m. searches; with large kills = night into morning.	
V. Duration of Study 3 years	
Duration (provide dates): Single Year _____ Multiple Years <u>1969-1971</u>	Seasons: Spring Migration _____ Both _____ Fall Migration <input checked="" type="checkbox"/> Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input type="checkbox"/>
Other Periods (Describe): See Section V.
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Search Area Described? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Survey area limited to 1 acre.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
N/A
Comments:
VIII. Number of Tower Sites: 1 Proximity:
WDBO in central Florida. 1,484 feet; guyed; red steady and flashing.
IX. Behavioral Observations at the Tower: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
On 10-11 Sep 1969, collisions began @ 23:00 hours and continued until dawn. Chirps and calls were continuous. Rapid, erratic flights, many birds hit buildings, cars, ground, and lower part of tower. At day break: live birds crouched in open areas; many injured and/or exhausted.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
Local weather station @ Herndon Airport used. Large kills associated w/ cold fronts and inclement weather. A few mortalities recorded on clear nights.

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes ___ No <input checked="" type="checkbox"/></p> <p>Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p>
<p>Detailed species lists.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p>
<p>Are additional studies identified? Yes ___ No <input checked="" type="checkbox"/> If yes explain and list studies.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p>
<p>Are specific methods identified? Yes ___ No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>

Primary Reference or New Data Review Sheet

I. Citation or Source:	
Tordoff, H. B. and R.M. Mengel. 1956. Studies of birds killed in nocturnal migration. University Kansas Museum Natural History Publication 10:1-44.	
Source Type (check one):	
Peer-reviewed Paper <input checked="" type="checkbox"/>	Other (specify):
Agency Report <input type="checkbox"/>	
Conference Proceedings <input type="checkbox"/>	
II. Study Objectives (list)	
Analysis of migratory birds killed fall of 1954 @ TV tower. Some aspects of migration also recorded.	
III. Species	
1,090 birds; 61 species.	
IV. Study Methods (briefly list)	
Not detailed.	
V. Duration of Study 1 season	
Duration (provide dates): Single Year <u>1954</u> Multiple Years _____	Seasons: Spring Migration _____ Both _____ Fall Migration <input checked="" type="checkbox"/> Yearlong _____

Primary Reference or New Data Review Sheet (cont'd)

VI. Carcass Search Methods (if applicable)
Search Conditions: Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Only after overcast nights with a low ceiling or storm events <input checked="" type="checkbox"/>
Other Periods (Describe):
Search Biases Evaluated, Including Observer Bias and Scavenger Activity? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Search Area Described? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Predator removal noted.
VII. Analytical and Statistical Methods
Statistical method(s) used: (list)
Used for sex/age comparisons.
Comments:
VIII. Number of Tower Sites: 1 Proximity:
WIBW – TV tower 1 mile west of Topeka, Kansas. 950-foot; guyed; red steady and flashing.
IX. Behavioral Observations at the Tower: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
X. Documentation of Weather Factors? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Describe if applicable to statement or conclusion being evaluated.
All major kills = cloudy/foggy nights w/ frontal systems; however, some kills occurred on fairly clear nights. Cloud ceiling typically as low as 800 to 1,000 feet.

Primary Reference or New Data Review Sheet (cont'd)

<p>XI. Inclusion of Structural and Landscape Conditions? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Describe if applicable to statement or conclusion being evaluated.</p>
<p>XII. Brief Description of Results</p> <p>Mortality reports provided data on birds' origination (e.g., most birds came from Central Flyway, nothing west of Great Plains). Computed numbers of migrants flying over, assuming uniform distribution, 1-mile-wide and 500-foot-high (450 to 950 feet). Compared to 950-foot tower to 500-foot radio tower ~ 24 mile east. Towers had same weather reported, but distinctly different mortality numbers. An increased number of mortalities at 950-foot tower, whereas 500-foot numbers were lower. Given this difference and location of birds near base of tower, the authors infer that most of the birds were flying >450 feet above the ground. Detailed species list.</p>
<p>XIII. Need for and Scope of Additional Studies (Only applicable if new data or study is provided.)</p> <p>Are additional studies identified? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes explain and list studies.</p> <p>Need additional studies on bird flight patterns > 450 feet above ground.</p>
<p>XIV. Suggested Methods to Minimize Impacts (Only applicable if new data or study is provided.)</p> <p>Are specific methods identified? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes explain and list specific mitigative methods.</p>