



# KITTATINNY RIDGE TOWER GUIDELINES FOR MUNICIPAL LEADERS

## TOURISM IMPACT & MIGRATING BIRD FACTS

- In 2001, watchable wildlife recreation in PA generated **\$961.7 million in sales** which included **\$156 million** in food, lodging and travel revenue.\*
- **3.4 million residents** of PA are involved in some form of wildlife recreation and **1 million** traveled to enjoy wildlife away from home.\*
- Hawk Mountain Sanctuary tallies approx. **50,000 birds** that are flying along the ridge each fall in addition to the **20,000 raptors**.\*\*
- Hawk Mountain Sanctuary alone contributed **more than \$6.2 million annually** to the Berks economy from tourism to local hotels, restaurants and gas stations. \*\*

\* S. Weidensaul. 2001. *Rescuing Pennsylvania's Wildlife*.

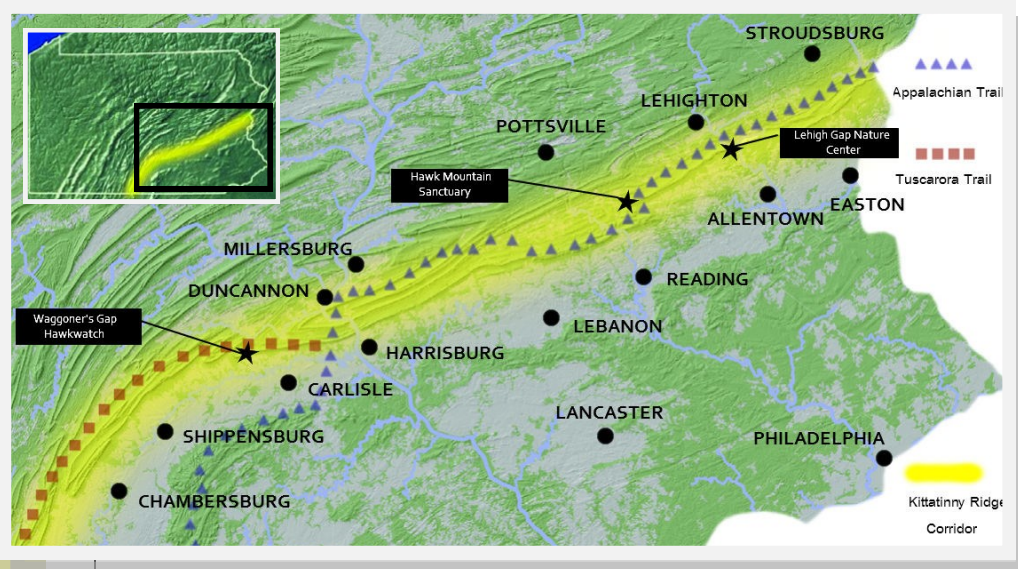
\*\* J. Rogers. 2012 *Return on Conservation*.



Green Heron Chicks  
Photo by Barbara Cattermole  
Upper Bern Township, Berks County

The Kittatinny Ridge, or Blue Mountain, runs through Pennsylvania for 185 miles, from the Delaware River to the Mason-Dixon Line. It is one of the Commonwealth's most treasured landscapes, providing the scenic backdrop to life in twelve counties and opportunities for recreation (hiking, birdwatching, hunting, fishing, etc.) for hundreds of thousands of Pennsylvanians. Recognized for its natural significance and eco-system services in local and county-wide comprehensive plans, the Ridge also protects important drinking water supplies and stream habitat.

The world-famous Appalachian National Scenic Trail traverses its spine, offering picturesque views of forested ridges and pastoral landscapes and opportunities for a rec-



reational wilderness experience accessible to millions of Americans. It also is home to Hawk Mountain Sanctuary, Cherry Valley National Wildlife Refuge, Delaware Water Gap National Recreation Area, and many state forest and game lands; and is designated a Pennsylvania Important Bird Area because it is a critical migration corridor used by tens of thousands of songbirds, hawks, eagles, and falcons each fall.

With the increasing applications for new communication towers on and adjacent to the Kittatinny Ridge, the aesthetic impacts posed by these structures is more and more evident. Cumulative impacts of forest fragmentation resulting from new tower construction and access roads can lead to significant habitat loss. Towers also pose a serious hazard to migrating birds, and the number of bird strikes increases significantly when towers taller than 200 feet are placed in an area of bird activity such as a migration flyway and when towers feature guy wires and lighting (See *Height, Guy Wires & Steady-Burning Lights Increase Hazard of Communication Towers* in Resources on page 3).

Depending on the nature of tower siting and construction, these towers can also greatly diminish the wilderness experience and scenic attraction of the Appalachian National



Tower along  
Kittatinny Ridge

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Scenic Trail, a fundamental resource value which the National Park Service, the Appalachian Trail Conservancy and local Trail maintaining clubs have the obligation to protect in perpetuity.

Even where communications towers are located outside the boundaries of the protected corridor, their very size and composition tend to dominate the landscape and seize the attention of the trail user. As towers proliferate, there are fewer undisturbed vistas available, therefore diminishing the scenic beauty of the Trail to the many visitors to our region and local residents.

The following guidelines will help safeguard the recreational and aesthetic value of the Appalachian Trail and to reduce the adverse impacts towers may have on migrating bird populations. They are advisory only and do not represent or replace the full scope of local, state, or federal communication tower requirements. Board members and municipal staff should confer with the municipal solicitor prior to implementation of any ordinances regulating communications towers.



## PLANNING

- Telecommunications companies and municipal officials are strongly encouraged to notify Kittatinny Ridge Coalition contacts, listed on page 4, as early as possible in the siting process when considering new towers within a mile of the Appalachian Trail (A.T.) or within the Kittatinny Ridge Important Bird Area. Early notification in the planning process can avoid significant delays in the site approval process and improve the proposal.
- The FCC requires that certain actions proposed by tower applicants or licensees comply with both the National Environmental Policy Act and Section 106 of the National Historic Preservation Act in order to consider and disclose the impacts of tower proposals on environmental and historic resources. The Appalachian National Scenic Trail is considered to be an historic resource and has been determined to be eligible for the National Register of Historic Places.
- The Appalachian Trail Conservancy will work with local officials and agency partners to incorporate these planning, location and construction criteria into plans and regulations and encourages its member clubs to do likewise.
- The Kittatinny Ridge Coalition will participate, and encourage A.T.-maintaining clubs, Audubon chapters and agency partners to participate, in public-review processes for new and expanded road-and-utility development proposals located within the Kittatinny Ridge Conservation Corridor.

## TOWER FACTS

- Construction of communication towers in the U.S. has been increasing at an estimated **6 to 8 percent annually**, and construction continues at a rate of approx. **1,000 new towers/month**.
- Loss of migratory birds at communication towers is estimated at **4 to 5 million** (2000) and **towers on ridges result in higher kills than other locations**.

## KITTATINNY COALITION PARTNERS IN TOWER GUIDANCE



Audubon

LEHIGH GAP  
NATURE CENTER



HAWK MOUNTAIN

# KITTATINNY RIDGE TOWER GUIDELINES

## RESOURCES

### Kittatinny Ridge Maps

[www.kittatinnyridge.org/mapping/index.html](http://www.kittatinnyridge.org/mapping/index.html)

### Download Appalachian Trail centerline in GIS

[www.appalachiantrail.org/about-the-trail/mapping-gis-data](http://www.appalachiantrail.org/about-the-trail/mapping-gis-data)

### View the Kittatinny Corridor boundary in GIS

<http://kittatinnyridge.org/mapping/index.html>

### *The Auk*: Height, Guy Wires & Steady-Burning Lights Increase Hazard of Communication Towers

[www.urbanwildlands.org/Resources/Longcore\\_06-253.pdf](http://www.urbanwildlands.org/Resources/Longcore_06-253.pdf)

### An Estimate of Avian Mortality at Communication Towers in the United States and Canada

[www.plosone.org/article/info:doi/10.1371/journal.pone.0034025](http://www.plosone.org/article/info:doi/10.1371/journal.pone.0034025)

### FCC Historic Preservation for Tower Siting

[wireless.fcc.gov/siting/historic\\_preservation.html](http://wireless.fcc.gov/siting/historic_preservation.html)

### Appalachian Trail Conservancy Policy on Roads and Utilities

[www.appalachiantrail.org/docs/trail-management-policies/roads-and-utilities-2000.pdf](http://www.appalachiantrail.org/docs/trail-management-policies/roads-and-utilities-2000.pdf)

### Michigan State University: *Fewer Lights, Safer Flights* Toolbox

<http://fewerlights.anr.msu.edu/>

### PA Local Gov. Regulation of Wireless Telecommunication Facilities

[www.newpa.com/webfm\\_send/1544](http://www.newpa.com/webfm_send/1544)

### Model Municipal Regulations for Tower Siting and Construction

[conservationtools.org/libraries/1/topics/103](http://conservationtools.org/libraries/1/topics/103)

### American Bird Conservancy

[www.abcbirds.org/abcp/programs/policy/collisions/towers.html](http://www.abcbirds.org/abcp/programs/policy/collisions/towers.html)

### KITTATINNY RIDGE COALITION

[WWW.KITTATINNYRIDGE.ORG](http://WWW.KITTATINNYRIDGE.ORG)

## LOCATION

- Construction of new tower structures on the ridge should be avoided. Communications equipment, antennas, etc. should be co-located on existing towers or structures (power line towers, water towers, church steeples, etc.) whenever feasible and co-location should be promoted within municipal ordinances. Further, tower structures need not be permitted on or near the ridge areas under municipal ordinances, so long as the municipal ordinance makes reasonable provision for communications towers elsewhere in the municipality.
- Any new adverse impacts to the scenic, natural or other resources of the Kittatinny Ridge caused by co-location should be fully mitigated on-site or in close proximity. Examples of adverse impacts include: additional "edge effect" from new roads or permanent clearings for facilities; or increase of tower height that would impact migratory birds or add a built structure to a natural viewshed.
- If co-location is proven infeasible through a detailed and thorough analysis of alternatives, towers and appendant facilities – including road access and fencing – should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint" and to result in no net loss of recreational values or the quality of the recreation experience provided by the Appalachian Trail.
- Tower owners or lessees should be required by municipal ordinances to remove any towers and associated facilities within 12 months of the cessation of use or if determined to be obsolete.

## CONSTRUCTION

- Lights on towers attract and confuse night-migrating birds, and can cause large mortality events as birds circle in the light and strike the tower or guy cables. Towers taller than 200 ft. above ground level (AGL) are required by the Federal Communications Commission (FCC) per Federal Aviation Administration (FAA) structure requirements to have lighting for aircraft safety. Therefore, if construction of new towers is required, we strongly recommend that they be less than 200 ft. AGL, if possible, so lighting is not necessary. Additionally, lights on towers and associated facilities, particularly in the natural, relatively unlit setting of the A.T., can cause light pollution adversely impacting the experience sought by astronomers, recreational stargazers and residents.
- Solid lights confuse and trap night-migrating birds at a much higher rate than flashing or strobe lights. Therefore, where permissible by FCC and local zoning regulations, we recommend flashing or strobe lights be used for all tower lighting and solid warning lights be avoided, **although note that strobe lights have a significant visual impact**. Furthermore, because any lights will cause mortality, we recommend using radar-activated lighting, a new technology that only turns on tower lights when aircraft are within a certain radius. While this technology was developed for use on wind turbines, FAA guidance for use on communication towers is forthcoming. Recent changes in FAA tower guidelines also allow flashing lights on all levels of towers. For more information on how to retrofit existing towers to make them more bird-friendly, see Michigan State University's *Fewer Lights, Safer Flights* toolbox in *Resources* at left.
- Avoid the use of guy wires, a major cause of tower-related bird mortality; and consider using a lattice structure or a monopole instead and limiting heights to less than 200 ft. AGL. Towers requiring guy wires for support should install several daytime visual markers (i.e., bird diverter devices) on the guy wires to reduce collisions by diurnally-active bird species.
- Lights on accessory buildings (i.e. generators, etc.) also cause bird mortality and should not be continuously lit. Reflect lighting on buildings downward to reduce dispersion to the sky and install motion-sensor lights.



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## ABOUT THE KITTATINNY COALITION

The Kittatinny Coalition is an alliance of organizations, agencies, and academic institutions working with municipal officials and private landowners to conserve the natural, scenic, cultural, and aesthetic resources of the Kittatinny Ridge and Corridor.

Our mission is to preserve the integrity of the Kittatinny Ridge and Corridor, a rugged, forested mountain surrounded by a mosaic of working lands, healthy streams and pastoral beauty.

Furthermore, our mission is to preserve, in perpetuity, this critical linkage of the Appalachian Mountain ecosystem, stretching across Pennsylvania from the Delaware Water Gap to the Maryland border, including the abundant un-fragmented forest for wildlife; fresh air; a safe, unobstructed passage for resident and migratory wildlife; headwater sources of clean and plentiful water for surrounding communities; a wild, scenic Appalachian Trail system experience; outdoor recreational opportunities; and wild areas to enrich the human mind and spirit.



## OUR GOALS

**Native Habitat:** Maintain and/or restore a healthy mosaic of high-quality native habitats throughout the Kittatinny Ridge Corridor.

**Conserved Land:** Increase the amount of permanently-protected land within the Kittatinny Ridge Corridor.

**Wildlife Conservation:** Conserve all native species occurring within the Kittatinny Ridge Corridor, including state and federally listed species, and those that occur exclusively as migrants.

**Clean Water:** Conserve groundwater and surface water quality and quantity in the Kittatinny Ridge Corridor.

**Connected Citizens:** Create a citizenry along the Ridge that is knowledgeable about the strong connections among environmental stewardship, community character, quality of life and economic competitiveness.

**Heritage Landscapes and Thriving Communities:** Help communities throughout the Kittatinny Ridge Corridor retain their desired quality of life, which is based on open space, forested slopes, pastoral valley landscapes, and small towns and villages.

**Enhanced Recreation:** Promote the use and compatible expansion of recreational resources located in the Kittatinny Ridge Corridor.

**Science:** Facilitate and promote scientific study of the Ridge, habitats, wildlife, conservation management activities, history and human communities.



## TOWER CONTACTS

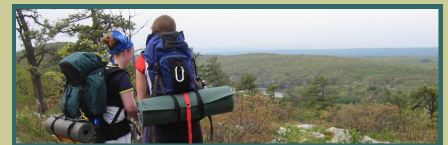
For more information contact:

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Or visit the Kittatinny Coalition web site at:  
[www.kittatinnyridge.org](http://www.kittatinnyridge.org)



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