

# Band-tailed Pigeon

*Columba fasciata*

Last updated: 2003

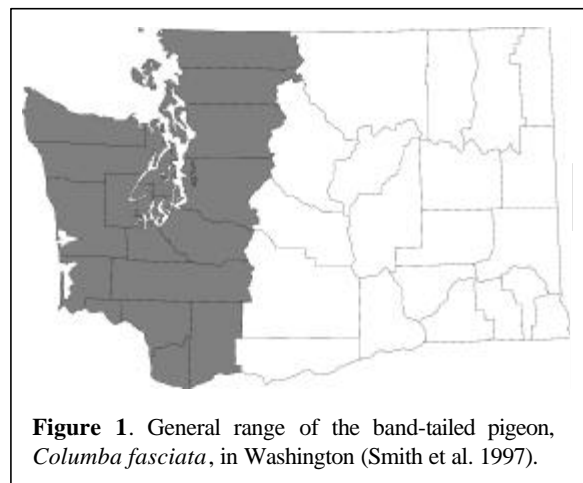
Written by Jeffrey C. Lewis, Michelle Tirhi, and Don Kraege

## GENERAL RANGE AND WASHINGTON DISTRIBUTION

Band-tailed pigeons are primarily restricted to coniferous forest zones in mountainous areas of western North America (Jarvis and Passmore 1992). Braun (1994) recognized two races of band-tailed pigeons in North America. The interior race (*Columba fasciata fasciata*) breeds primarily in the Rocky Mountains south of Wyoming, whereas the Pacific Coast race (*Columba fasciata monilis*) breeds west of the Cascade and Sierra Nevada crests [up to 4,200 m (13,800 ft) elevation; Pacific Flyway Council 1983] from British Columbia and southeastern Alaska south to Baja California, Mexico.

The bulk of Pacific Coast population of band-tailed pigeons winters from south of Redding, California through Mexico (Schroeder and Braun 1993); however, year-round residents occur in the Pacific Northwest (Jarvis and Passmore 1992). Schroeder and Braun (1993) found that some interchange occurs between the Pacific coast and interior races.

Band-tailed pigeons reside mainly in western Washington (see Figure 1) and are typically located around mineral springs and seeps (Keppie and Braun 2000). The highest densities occur on the Olympic Peninsula and on Washington's southern coast (Grays Harbor, Pacific, and Wahkiakum counties). During the breeding season (April - September), most of the population is found below 305 m (1,000 ft) elevation (Jeffrey 1989). In late summer, band-tailed pigeons may move to higher elevations. By late September, most band-tailed pigeons leave Washington and migrate to their wintering grounds. However, year-round residents are known to occur in the Puget Sound as far north as Seattle (B. Tweit, personal communication).



**Figure 1.** General range of the band-tailed pigeon, *Columba fasciata*, in Washington (Smith et al. 1997).

## RATIONALE

Band-tailed pigeons are listed as a State and Federal Game species. The hunting season in Washington underwent an emergency closure in 1991 due to a rapid decline in the population as determined from pigeon surveys (Braun 1994). Breeding Bird Survey data indicated the population of band-tailed pigeons in Washington declined significantly from 1968 to 1993 (Braun 1994, Keppie and Braun 2000). However, more recent data showed increases in population that allowed the reinstatement of a limited hunting season in 2002, after a 10-year restriction on hunting (Washington Department of Fish and Wildlife 2001, 2002).

Band-tailed pigeons require mineral springs close to a food source during the breeding and brood-rearing season (Jarvis and Passmore 1992). A scarcity of mineral sites combined with the alteration of available nesting habitat jeopardizes band-tailed

pigeon populations (Braun 1994). Intensive hunting pressure in the past has also been held responsible for declines in the population (Jarvis and Passmore 1992).

## HABITAT REQUIREMENTS

In Washington, band-tailed pigeons are associated with Douglas-fir (*Pseudotsuga menziesii*), red alder (*Alnus rubra*), western hemlock (*Tsuga heterophylla*), red cedar (*Thuja plicata*), bigleaf maple (*Acer macrophyllum*), sitka spruce (*Picea sitchensis*), willow (*Salix* spp.), pine (*Pinus* spp.), cottonwood (*Populus* spp.), and Garry oak (*Quercus garryana*) (Jeffrey 1989, Braun 1994). Berry- and nut-producing trees and shrubs are also common in their range (Keppie and Braun 2000).

## Breeding Season

During the breeding season (April - September), band-tailed pigeons are found in mixed conifer and hardwood forests interspersed with younger wooded areas or small fields (Jeffrey 1977, 1989). Abundant food and mineral sources are necessary during this time (Jarvis and Passmore 1992). Nesting habitat in western Oregon is dominated by closed-canopy, conifer forests (mostly Douglas-fir) in sapling-pole forest development stages (Leonard 1998). Nests are placed in conifers or broad-leaved trees, typically 4.5-12.0 m (15-40 ft) above the ground. Nests may be distributed in small groups or well-dispersed (Jeffrey 1977, Curtis and Braun 1983). In Oregon, average home range size during the nesting season was 11,121 ha. (Leonard, 1998).

Band-tailed pigeons seek sources of mineral salts (especially calcium) necessary for egg production and the production of "crop milk" for feeding young (March and Sadleir 1975, Jarvis and Passmore 1992, Braun 1994). Mineral salts are found in mineral springs and marine shorelines, and occasionally livestock salt blocks are used (Jeffrey 1977). Pigeons have been documented returning to mineral springs in subsequent years (Jarvis and Passmore 1977, 1992).

## Food

During spring migration, this herbivorous bird feeds on acorns, buds, blossoms, young leaves and needles, fruits, and berries (Jeffrey 1977). Primary food sources include Cascara buckthorn (*Rhamnus purshiana*), elderberry (*Sambucus* spp.), wild cherry (*Prunus* spp.), huckleberry (*Gaylussacia* spp.), madrone (*Arbutus menziesii*), dogwood (*Cornus* spp.), and oak (*Quercus* spp.) in late spring and summer (Jeffrey 1977). Pacific red elderberry (*Sambucus callicarpa*), blue elderberry (*Sambucus cerulea*), and cascara buckthorn were determined to be important food items in the Northwest because of their high caloric, calcium and protein content (Jarvis and Passmore 1992, Keppie and Braun 2000, Sanders 2000). During the spring and summer, newly planted fields or stubble containing grains from the fall harvest are also preferred food sources (Jarvis and Passmore 1992, Braun 1994, Keppie and Braun 2000).

During fall and winter, band-tailed pigeons feed on acorns, nuts, berries, grains and fruits (Fry and Vaughn 1977, Jeffrey 1989). Pigeons often move to high elevation meadows in the fall prior to migration (Jeffrey 1989). In the Oregon coastal range, primary feeding sites for radio-marked band-tailed pigeons were located in riparian or moist bottomlands (Leonard 1998). Nestlings feed on "crop milk" which is later supplemented by other regurgitated crop contents from either parent (Keppie and Braun 2000).

## LIMITING FACTORS

Land development and forest practices that degrade or destroy mineral springs and nesting habitat limit band-tailed pigeon populations (Pacific Flyway Council 1983). Although undocumented mineral sites likely occur, only a limited number of mineral sites actively used by pigeons are known to exist in western Washington (Gillum 1993). A lack of berry/mast-producing plants may also limit use of areas by band-tailed pigeons (D. Kraege, personal communication).

Band-tailed pigeons lay a single egg 1 to 3 times per year (Leonard 1998); thus, their productivity is considered low. Intensive hunting of band-tailed pigeons can be detrimental (Neff 1947; D. Kraege, personal communication), especially at mineral sites where breeding adults are more abundant than juveniles during the hunting season (Jarvis and Passmore 1992).

Outbreaks of the protozoan disease Trichomoniasis are suspected in periodic large-scale mortalities of band-tailed pigeons (Keppie and Braun 2000). Trichomoniasis is transmitted through contaminated feed at urban bird feeders and possibly through contaminated mineral springs (D. Kraege, personal communication).

## MANAGEMENT RECOMMENDATIONS

To adequately conserve nesting habitat, mineral springs and other mineral sources used by band-tailed pigeons should be protected (Braun 1994). Trees surrounding mineral sites are important for perching (Pacific Flyway Council 2001), and their removal should be avoided. Mineral sources may be enhanced by removing dense vegetation that could limit bird access. Because mineral sites are uncommon, they should be a high priority for conservation-oriented acquisitions.

Large clearcuts should be discouraged in band-tailed pigeon habitat (Jeffrey 1977). Clearcuts should be replanted with a variety of species rather than a single tree species. Berry/mast-producing shrubs and trees are important food sources and should be maintained and enhanced, particularly those close to mineral sources and higher elevation areas used during migration (Braun 1994).

The use of herbicides that eliminate food producing shrubs and trees should be discouraged, particularly in stands containing the important food sources described by Jeffrey (1977). Modern silvicultural practices, including the use of herbicides to control deciduous shrubs and trees, have potentially reduced food-producing plants throughout the range of the band-tailed pigeon (Braun 1994). Landowners are encouraged to use integrated pest management strategies that target specific pests or weeds, use pest population thresholds to determine when to use pesticides or herbicides, and to use crop rotation/diversity and beneficial insects to control pests (Stinson and Bromley 1991). If pesticide or herbicide application is planned for areas used by band-tailed pigeons, refer to Appendix A for a list of contacts to consult when using and assessing pesticides, herbicides and their alternatives.

People maintaining bird feeders should regularly clean feeders and report all sick and dying band-tailed pigeons to the nearest Washington Department of Fish and Wildlife regional office, the U.S. Fish and Wildlife Service regional headquarters, or to the USGS Wildlife Health Research Center at (608) 271-4640 (D. Kraege, personal communication).

## REFERENCES

- Braun, C. E. 1994. Band-tailed pigeon. Pages 60-74 in T.C. Tacha and C. E. Braun, editors. Migratory shore and upland game bird management in North America. International Association of Fish and Wildlife Agencies, Washington, D.C., USA.
- Curtis, P. D., and C. E. Braun. 1983. Radio telemetry location of nesting band-tailed pigeons (*Columba fasciata*) in Colorado, USA. *Wilson Bulletin* 95:464-466.
- Fry, M. E., and C. E. Vaughn. 1977. Acorn selection by band-tailed pigeons. *California Department of Fish and Game* 61:59-60.
- Gillum, J. M. 1993. Band-tailed pigeon survey for 1993 conducted at mineral sites in Washington State. Washington Department of Wildlife, Olympia, Washington, USA.
- Jarvis, R. L., and M. F. Passmore. 1977. Band-tailed pigeon investigations in Oregon, an overview. Upland Game Bird Commission, Oregon State University, Corvallis, Oregon, USA.
- \_\_\_\_\_, and \_\_\_\_\_. 1992. Ecology of band-tailed pigeons in Oregon. Biological Report, 6, U.S. Fish and Wildlife Service, Washington, D.C.
- Jeffrey, R. G. 1977. Band-tailed pigeon (*Columba fasciata*). Pages 210-245 in G. C. Sanderson, editor. Management of migratory shore and upland game birds in North America. International Association of Fish and Wildlife Agencies, Washington, D.C.
- \_\_\_\_\_. 1989. The band-tailed pigeon: distribution, effects of harvest regulations, mortality rates, and habits 1968-79. Unpublished Report, Washington Department of Wildlife, Olympia, Washington, USA.
- Keppie, D. M., and C.E. Braun. 2000. Band-tailed pigeon (*Columba fasciata*). Number 530 in A Poole and F. Gill, editors. *Birds of North America, Incorporated*, Philadelphia, Pennsylvania, USA.
- Leonard, J.P. 1998. Nesting and foraging ecology of the band-tailed pigeon in western Oregon. Ph.D. Dissertation, Oregon

- State University, Corvallis, Oregon, USA.
- March, G. L., and R. M. F. S. Sadleir. 1975. Studies on the band-tailed pigeon (*Columba fasciata*) in British Columbia: seasonal changes in body weight and calcium distribution. *Physiological Zoology* 48:49-56.
- Neff, J. A. 1947. Habits, food, and economic status of the band-tailed pigeon. *North American Fauna* 58:1-76
- Pacific Flyway Council. 1983. Pacific Coast band-tailed pigeon management plan. U.S. Fish and Wildlife Service, Portland, Oregon, USA.
- \_\_\_\_\_. 2001. Pacific and Central Flyways management plan for the Four Corners population of band-tailed pigeons. Pacific Flyway Council, U.S. Fish and Wildlife Service, Portland, Oregon, USA.
- Sanders, T. A. 2000. Habitat availability, dietary mineral supplement, and measuring abundance of band-tailed pigeons in western Oregon. Ph.D. Dissertation, Oregon State University, Corvallis, Oregon, USA.
- Schroeder, M. A., and C. E. Braun. 1993. Movement and philopatry of band-tailed pigeons captured in Colorado. *Journal of Wildlife Management* 57:103-112.
- Smith, M. R., P. W. Mattocks, Jr., and K. M. Cassidy. 1997. Breeding birds of Washington state. Volume 4 in K. M. Cassidy, C. E. Grue, M. R. Smith, and K. M. Dvornich, editors. Washington GAP Analysis - Final Report Seattle Audubon Society Publication in Zoology Number 1, Seattle, Washington, USA.
- Stinson, E. R., and P. T. Bromley. 1991. Pesticides and wildlife: a guide to reducing impacts on animals and their habitat. Virginia Department of Game and Inland Fisheries, Richmond, Virginia, USA.
- Washington Department of Fish and Wildlife. 2001. 2001 Game status and trend report. Wildlife Program, Washington Department of Fish and Wildlife, Olympia, Washington, USA.
- Washington Department of Fish and Wildlife. 2002. News release, June 10, 2002. Olympia, Washington, USA.

## PERSONAL COMMUNICATIONS

Don Kraege, Waterfowl Section Manager  
Washington Department of Fish and Wildlife  
Olympia, Washington  
Bill Tweit, Biologist

Bill Tweit, Biologist  
Washington Department of Fish and Wildlife  
Olympia, Washington

## KEY POINTS

### Habitat Requirements

- \$ Band-tailed pigeons are associated with Sitka spruce, red cedar, western hemlock, red alder, bigleaf maple, Douglas-fir, willow, pine, cottonwood, Garry oak, and other berry- and nut-producing trees and shrubs.
- \$ Mixed conifers and hardwoods with a good interspersed forest development stages and openings, abundant food resources, and mineral springs are necessary during the breeding and brood-rearing seasons.
- \$ Band-tailed pigeons feed on grains, acorns, nuts, buds, blossoms, young leaves, needles, and the fruits and berries of several trees and shrubs.

### Management Recommendations

- \$ Protected and/or enhance mineral springs and other mineral sources used by band-tailed pigeons. These areas should be a high priority for conservation-oriented acquisition.
- \$ Avoid removal of trees surrounding mineral sites.
- \$ Avoid large clearcuts in band-tailed pigeon habitat.
- \$ Replant clearcuts with multiple tree species. Maintain and enhance berry-, fruit-, and nut-producing shrubs and trees in band-tailed pigeon habitat.
- \$ Avoid using herbicides that eliminate local food producing trees and shrubs and use integrated pest management within band-tailed pigeon habitats when possible. If pesticide or herbicide use is being considered for areas used by band-tailed pigeons, refer to Appendix A for a list of contacts to consult to assess pesticides, herbicides and their alternatives.
- \$ Report sick and dying band-tailed pigeons (indicating Trichomoniasis disease) to the nearest Washington Department of Fish and Wildlife regional office, the U.S. Fish and Wildlife Service regional headquarters, or to the USGS Wildlife Health Research Center at (608) 271-4640.
- \$ Avoid maintaining bird feeders in urban areas where Trichomoniasis outbreaks have been documented and regularly clean feeders.