



Woodland Fish and Wildlife

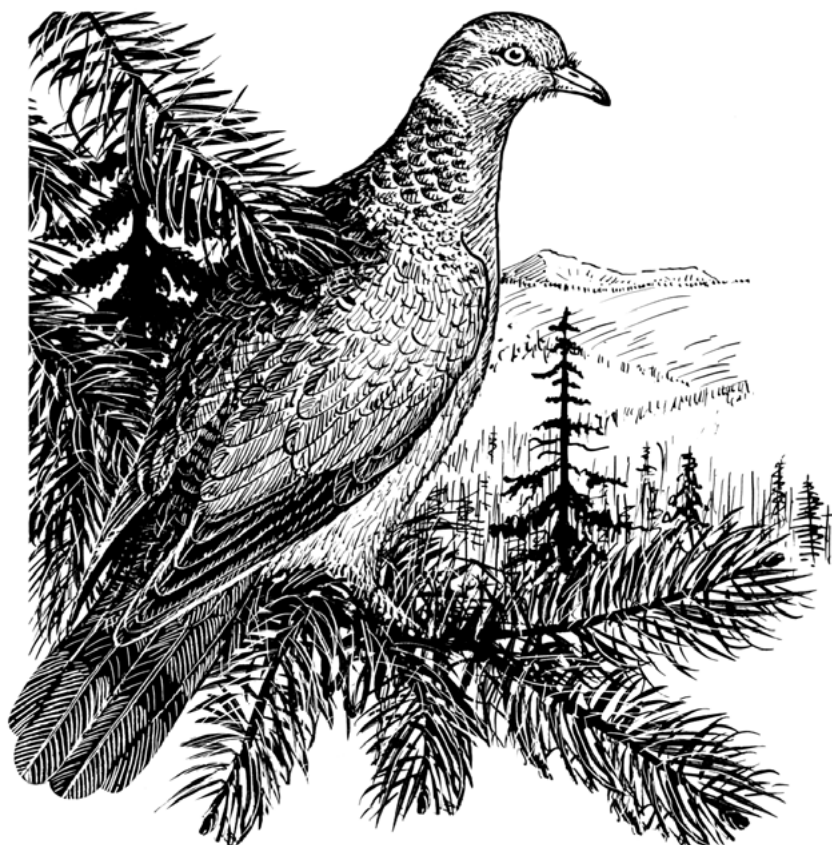
Managing Pacific Northwest Forests for Band-Tailed Pigeons

The family of birds that includes pigeons and doves is found throughout temperate and tropical regions of the world. Three species of wild pigeons and three species of doves existed until 1913 in North America, when the single remaining passenger pigeon died in a Cincinnati zoo. A second

species of forest pigeon continues to occur throughout many of the Caribbean Islands and into the southern tip of Florida. The third species, the Band-tailed pigeon (*Columba fasciata*), is a western species with two distinct populations: one in the intermountain West (in the “four corners area”

of the Southwest) and the other along the West Coast, ranging from southeastern Alaska and western British Columbia south to California and into Mexico. It is migratory and classed as a migratory game bird (historically hunted for food and recreation) and as a priority species in Washington.

The band-tailed pigeon has an interesting life history. However, detailed research on its life requirements has not been conducted, like the work that has been done on other game birds. A variety of factors has reduced the total population of this bird to a fraction of what it was just a few decades ago. The welfare of the Pacific Coast population is directly related to forestland management in Oregon and Washington and is therefore of interest to small forestland owners. The wild, native band-tailed pigeon should not be confused with its distant relative the common pigeon (actually a rock dove), imported from Europe and often seen around farms, cities, and parks. The rock dove may show a variety of color patterns, whereas the Band-tailed pigeon is uniquely marked with almost no variation. Furthermore, the rock dove rarely perches in trees, while



the band-tailed pigeon spends much of its time perched in trees, especially in the tops of the tallest conifers. The band-tailed pigeon is called by a variety of common or local names, such as bandtail, wild pigeon, wood pigeon, and—as one well-known outdoor writer who loved pursuing this bird called it—the Pacific mountaineer. Its formal name, band-tailed pigeon, describes it well.

DESCRIPTION

The bandtail is a fast-flying migratory game bird known for long distance flights. It is about 14–17 inches in length and weighs about 1 pound. The adult has a white bar around the nape of the neck, slate gray feathers with much iridescent shading, yellow feet, and a black-tipped yellow beak. The tail feathers have a broad black band near their tips to complete their namesake description. Only a little sexual dimorphism (different color markings and patterns) exists between males and females. Their vocalization is a cooing sound similar to that of rock doves and deeper in tone than that of mourning doves. The bandtail frequently gives a series of coos of one to three notes described as a “hoop-a-who” and typically repeated numerous times.

LIFE HISTORY

Range. The West Coast population of band-tailed pigeons nests throughout their annual range from southeastern Alaska to northern Mexico, with the majority of nest-



ing occurring from the mid-south coastline of British Columbia and Vancouver Island through the northern part of California and extending eastward to the western slopes of the Cascades and Sierra Nevada mountains. Southern migration begins by late summer. Most birds winter in the coastal mountains of California south of Redding, although some make their way well into Mexico. Some hardier individuals choose to over-winter in the lowlands and urban areas of western Oregon and Washington, where plentiful food resources, including bird feeders, may be present. Occasionally, bandtails are found in eastern Washington and Oregon, although their numbers fluctuate and are not large. Interchange between the West Coast and intermountain West populations may occur, resulting in a mixing and expanding of their gene pools. The timing and speed of migration is partially dictated

by available food supplies along the way and within the areas where they over-winter.

Reproduction and Nesting.

Band-tailed pigeons are known to be monogamous, at least throughout an individual nesting season, with both sexes sharing in incubation and rearing of the squabs (nestling pigeons). Pairing and reproduction may begin upon their return in the spring and extend into September, but the peak of breeding is usually mid-June through July. Bandtails are believed to begin breeding at about one year of age. Reproduction rates are low compared to most other bird species in their size class. Only one egg per nest is laid and incubated. Bandtails in the northern ranges may raise only one young per year, whereas pigeons that stay in the southern ranges may have up to three or four nesting attempts during the summer nesting season—

as one squab is being raised, another nest is constructed and another egg laid. Food supplies near nesting areas may influence the time and extent of nesting periods, and, thus, the number of young raised in a season.

Nesting may occur in any suitable habitat but most is done below 1,000 feet elevation. This locates the pigeons primarily within private forestlands throughout their range. Bandtail nest sites are flimsy platforms constructed of twigs, usually in conifer stands of any age, with younger stands heavily used. Some nesting occurs in hardwoods and more rarely in shrubs. The importance of stand size is not known, but small stands with open canopies may subject the birds to increased nest predation. In one Oregon study, highest numbers of nests were found in closed-canopy stands. Band-tailed pigeons may return to the same nest site every summer and construct new nests in that stand. In another Oregon study, most nesting occurred within 16 miles of mineral springs and mineral-laden waters. Mineral springs are described and discussed in the next section.

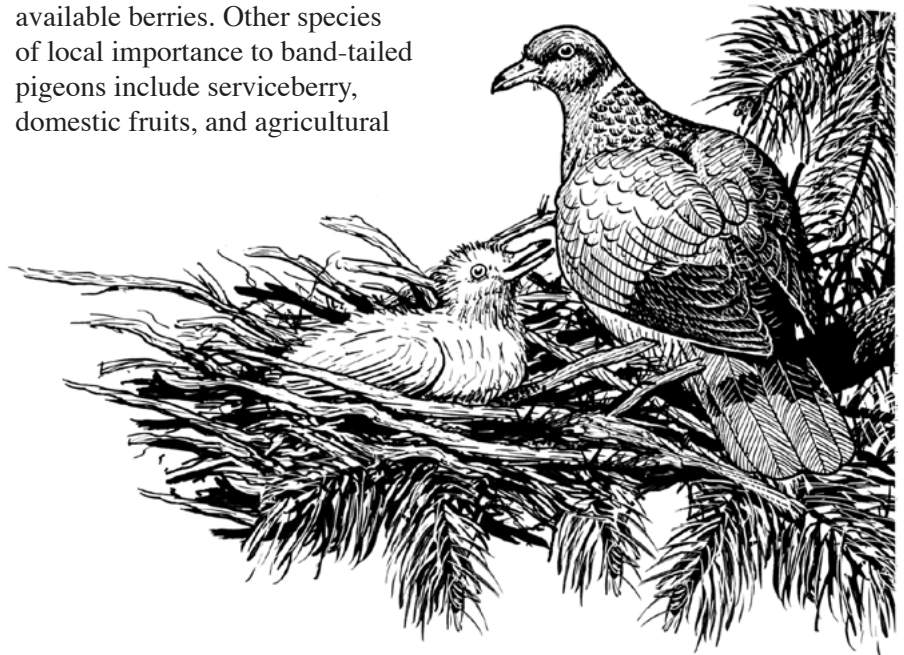
Food Habits and Foraging.

Hard mast (nuts) is readily consumed on the bandtails' wintering grounds during the fall-spring period. The birds often congregate in oak stands where they consume large quantities of acorns. Bandtails also feed on other available hard mast during this period. Finding good food sources along the pigeons' migration route as they move north in springtime can be challenging. During this period

they feed on leftover hard mast, waste-grain, buds, early fruits, and even conifer flowers and pollen. They primarily rely on soft mast or berries from native trees and shrubs during the nesting season. Throughout their nesting range in Oregon and Washington, bandtails have been noted to rely on red elderberry as it ripens in early summer and switch to species such as bitter cherry, hawthorn, Pacific madrone, dogwood, and especially blue elderberry and cascara as they ripen. Blue elderberry has a more limited distribution than the red but is relished by band-tailed pigeons. The fruit of the widespread cascara tree (also known as cascara buckthorn and chittem wood) is similar in size and color to huckleberries and is particularly favored by pigeons, and may be fed on as it ripens from late July through autumn. Bandtails often congregate in large numbers in plentiful cascara patches and remain there well into the fall migration season, continuing to forage on the available berries. Other species of local importance to band-tailed pigeons include serviceberry, domestic fruits, and agricultural

grains. When available, some mast-producing ground covers, such as salal, huckleberry, and even the little bunchberry (pigeon berry), are considered choice foods for bandtails. Both nesting and migrating pigeons will forage in very high elevations if low-elevation food sources become scarce. In late summer and during the fall migration, large flocks of pigeons are often seen in very high and/or steep forestland, concentrated in patches of choice foods such as cascara and blue elderberry. These same food items attract band-tailed pigeons in urban/suburban areas, and backyard feeders and feeding stations may draw and hold pigeons even during the winter months.

Most soft mast found within the bandtails' breeding range is deficient in essential minerals, especially calcium. Mineral springs and mineral-laden coastal waters then become crucial to the well-being of bandtail populations.



Mineral Springs. Fewer than 100 documented mineral springs in Oregon and Washington are frequented by pigeons. These are scattered among coastal waters to Puget Sound, and inland up the western slopes of the Cascades. Saltwater areas where mineral-laden water seeps over exposed rocks and gravel during low tide events are also used. These waters contain the all-important calcium and mineral salts essential for band-tails' eggshell production and bone and tissue development in the squabs. Band-tailed pigeons gather frequently at these sites during the nesting season to drink the mineral-laden waters before returning to their nests, where the solution is processed in glands found along the throat. Once deposited in the parent bird's crop (a sack-like structure in the throat where food is stored) it is made available to the squabs in the form of a curd-like "pigeon milk." Soft mast is also fed to squabs in this manner. Adult birds may return to the mineral springs two to three times per week. While one adult is brooding the squab, the other may be foraging and traveling to one of the mineral sites. Hundreds of birds may congregate at a spring after nesting is over and some form of interaction and communication presumably occurs. Early European settlers also frequented the springs, historically noting their location and use by pigeons.

Predation and Diseases.

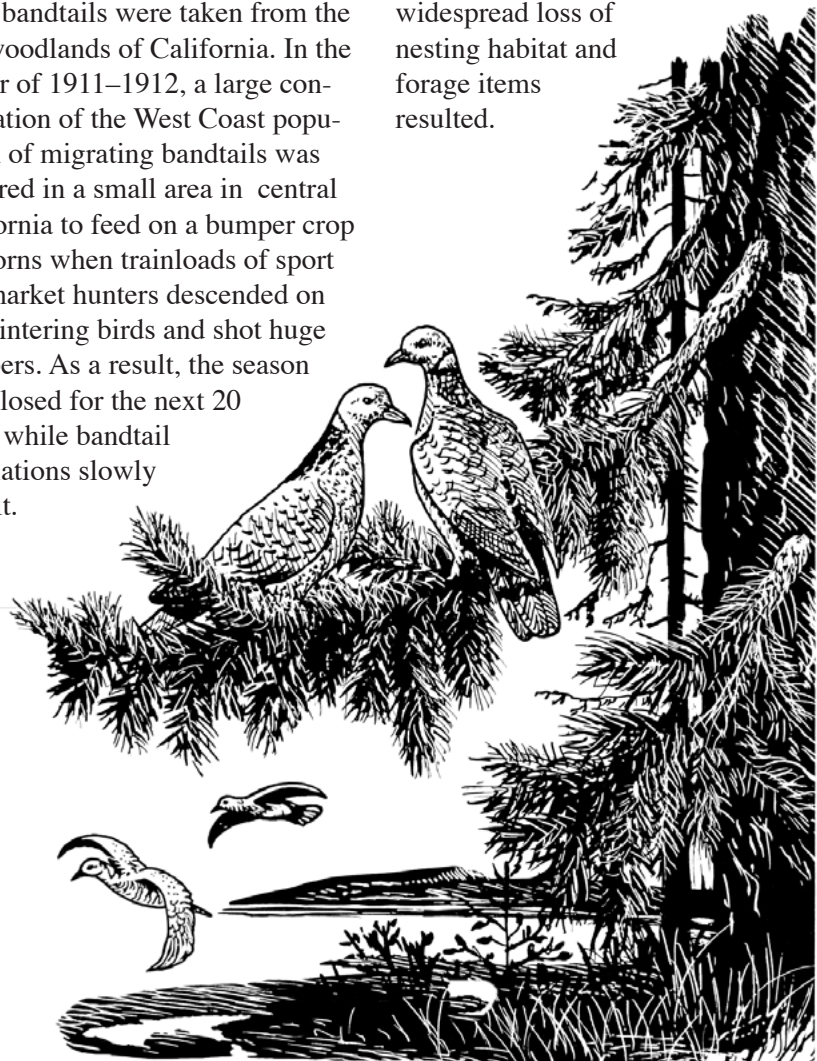
Predators of adult band-tailed pigeons can include forest raptors, especially goshawks and Cooper's hawks. Eggs and nestlings are quite susceptible to predation by ravens,

crows, and jays. Susceptibility to nest predation may increase where stands are smaller and/or canopies are less developed. Large numbers of pigeons have been killed by a protozoan disease that may be transmitted at bird feeders and feeding stations.

POPULATION STATUS

During the late 19th and early 20th centuries, prior to the enactment of federal game laws, large numbers of band-tailed pigeons were killed and shipped to market—a fate similar to that of the passenger pigeon. Most bandtails were taken from the oak woodlands of California. In the winter of 1911–1912, a large concentration of the West Coast population of migrating bandtails was gathered in a small area in central California to feed on a bumper crop of acorns when trainloads of sport and market hunters descended on the wintering birds and shot huge numbers. As a result, the season was closed for the next 20 years while bandtail populations slowly rebuilt.

This scenario—minus the market hunting that was outlawed in 1916—was repeated at least twice more, however, in the 1930s and 1940s. In 1972, more than a half million band-tailed pigeons were killed in California and one-quarter million in Oregon, Washington, and British Columbia. This was estimated to be about one-half of the entire West Coast population. During the 1980s, heavy harvest of second growth low-elevation forests occurred throughout the region, along with heavy site preparation and early stand management. Rapid and widespread loss of nesting habitat and forage items resulted.



Hunting seasons were subsequently restricted or shut down for the next 10 years, opening only on a very small scale compared with previous seasons.

The West Coast bandtail population has slowly been increasing in the last decade, in response to hunting closures and restrictions coupled with habitat rehabilitation and regrowth. Hunting is now allowed only when populations are above a certain “threshold” level, and even then only in a very limited season with a very modest bag limit. Washington and Oregon now harvest less than 6,000 birds total during the short season, compared to tens of thousands taken in previous decades. The complete population total is unknown, but two basic types of surveys have been conducted annually that form a trend analysis of population changes. These involve breeding bird “calling” counts along prescribed fixed routes during the peak of breeding, and more recently, with counts at known mineral springs.

MANAGEMENT

There are many practices a private timberland owner can undertake to protect, enhance, and even create pigeon habitat in the course of normal timber management activities. These may include:

- Postpone harvest of stands being used for nesting until after the nesting season. Ideally, a similar stand of trees would be retained nearby for replacement of lost nesting habitat or the portion used for nesting would be removed from harvest.
- Protect patches of cascara, elderberry, and mast-producing trees and shrubs used by feeding pigeons. This may require slashing by hand or using a backpack sprayer to apply herbicides around individual young conifers in lieu of aerial or broadcast herbicide spraying while retaining mast-producing shrubs and trees where possible.
- Enhance patches of mast-producing trees and shrubs by removing competing overstory trees. This is contrary to good conifer timber management, but it is good pigeon management.
- Create patches of cascara, elderberry, and/or other mast-producing shrubs in new or existing small forest openings, along field borders, and near wetlands and riparian zones. Cascara and red elderberry are easily started from bareroot stock or seeds, whereas blue elderberry is best started from container stock or seeds. Madrone and Pacific dogwood are best treated like blue elderberry when planted, while bare-root hawthorn, bitter cherry, and serviceberry are generally hardy if properly planted. Plant in large clumps or whole patches in full or almost-full sunlight. Pigeons are less likely to discover individual trees or shrubs.
- Include cascara and elderberry seed in wildlife-forage mix sown along and on skid roads, logging roads, landings, and at slash burn sites.
- Underplant cascara and other mast-producing trees and shrubs in heavily thinned timber stands where filtered sunlight will reach the plantings. These sites are excellent band-tailed pigeon feeding areas and the planted mast-producing trees and shrubs in these settings should not compete with well-established and dominant conifers.
- Protect and enhance any known mineral springs on your property. This includes clearing away heavy brush that can harbor predators and obscure or limit access and maintaining some adjacent overstory trees for pigeons to use as observation and communication perches. Research shows limited success with creation of mineral-laden waters by using mineral pellets or blocks in opened fresh springs and seeps.
- Band-tailed pigeons are often attracted to backyard bird feeders, especially in spring and early summer. Keep bird feeders clean and supplied with only fresh dry seed and remove any spillage from the ground to reduce the risks of transmittable protozoans and other diseases. Report all dead birds near feeders to the appropriate local offices of the state fish and wildlife department.

With time, luck, and ample food and nesting habitats, the band-tailed pigeon population may increase so that large flocks of migrating birds will again be seen in feeding areas and the soft cooing of nesting birds will continue to sound across our managed forestlands.

REFERENCES

- Jarvis, R.L. and M.F. Passmore. 1992. *Ecology of Band-tailed Pigeons in Oregon*. Washington D.C.: U.S. Fish and Wildlife Service, Biological Report 6.
- Jeffrey, R.G., C.E. Braun, D.E. Brown, D.R. Halladay, P.M. Howard, C.E. Kebbe, D.H. Nish, W.A. Smith, and T.P. Zapatka. 1977. Band-tailed pigeon (*Columba fasciata*). In *Management of Migratory Shore and Upland Game Birds in North America*, ed. G.C. Sanderson, 208–45. Washington D.C.: Int. Assoc. Fish and Wild. Agencies.
- Leonard, J.P. 1998. Nesting and foraging ecology of the band-tailed pigeon in western Oregon. Ph.D. Diss., Oregon State Univ.
- Lewis, J.C., M. Terhi, and D. Kraege. 2003. Band-tailed pigeon (*Columba fasciata*). In Vol. IV of Management Recommendations for Washington's Priority Species, Birds, ed. E.M. Larson, N. Nordstrom, and J. Azerrad. http://www.wa.gov/wdfw/hab/phs/vol4/band_pigeon.pdf.
- Pacific Flyway Council. 1983. *Pacific Coast Band-tailed Pigeon Management Plan*. Portland, OR: U.S. Fish and Wildlife Service.
- Sanders, T.A. 2000. Habitat availability, dietary mineral supplement, and measuring abundance of band-tailed pigeons in western Oregon. Ph.D. Diss., Oregon State Univ.
- Wahl, T. 2005. Band-tailed pigeon, *Patagioenas fasciata*. In *Birds of Washington State, Status and Distribution*, ed. T.M. Whal, B. Tweit, and S.G. Mlodinow. Corvallis, OR: Oregon State University Press.



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A WOODLAND FISH AND WILDLIFE PROJECT PUBLICATION

By

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The Woodland Fish and Wildlife Project is a cooperative effort among the World Forestry Center, Oregon State Department of Forestry, Oregon Department of Fish and Wildlife, Washington State Department of Natural Resources, University of Washington College of Forest Resources, Oregon State University Extension Service, Washington State University Extension, Oregon Association of Conservation Districts, Oregon Small Woodlands Association, Washington Farm Forestry Association, Washington Department of Fish and Wildlife, USDA Natural Resources Conservation Service, USDA Forest Service, US Fish and Wildlife Service, and the Western Forestry and Conservation Association.

The Woodland Fish and Wildlife Project was initiated to provide information on fish and wildlife management to private woodland owners and managers. It is the intent of the organizations involved in this project to produce publications that will serve as practical guides to woodland owners.

Each publication is intended to be complete in itself. Users may find it convenient to collect all publications in this series in a three ring binder to form a permanent reference file. Woodland Fish and Wildlife Project publications range from an overview of fish and wildlife opportunities on woodland properties to specific publications concerning techniques for managing individual species.



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