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Birdlife: Indicator of Environmental Quality

Michigan State University

Cooperative Extension Service

James E. Neal, District Extension Leader and Einer G. Olstrom, Program Director

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Birdlife- an indicator of Environmental Quality

By James E. Neal and Einer G. Olstrom, District Extension Leader and Program Director, Respectively, Resource Development

Years ago, canaries were used in coal mines to warn of impending danger. The canaries were more sensitive to a lack of oxygen and an increase in carbon monoxide than the miners. If the canaries began to collapse and die, the miners found the cause of the deadly gas or quickly retreated from the mine shafts.

We know that different species of birdlife require different habitat. This knowledge should enable us to measure our local natural environment by the number of different kinds of birds we see near our homes. If only a few kinds of birds are observed, natural habitat must be limited. If a variety of birds are seen, the environment is more natural and complete.

BASIC ASSUMPTION

Most people would agree that an environment that provides for a variety of birds (a more natural, complete environment) is also more desirable for humans.

Consider the kinds of birds that live in a highly urbanized or developed environment. Only pigeons and sparrows are found in a large city that is building-bound with concrete surfaces, and limited grass and tree areas. Why? Because these birds can survive on the food, shelter and protection provided by a concrete city environment.

In contrast, birds such as orioles, warblers and thrushes, require a variety of vegetation and other conditions for survival.

It should be noted that "backyard" birdlife can be limited, even in rural areas, due to lack of food and shelter. A home without plantings in the middle of an open field is a good example.

Page 2 is designed to help you measure your natural environment. It is a very simple guide for classifying the natural Environmental Quality of your locale as poor, fair, good or excellent. To use this guide, it will be necessary to spend some time observing your "neighborhood" birdlife. A good book about birds and a pair of binoculars will help, too.

Fill-in the blank spaces on the right of the page with the species you observe in your neighborhood over several weeks' time. (The guide is based on summer months—fewer birds will be observed in the wintertime.)

Note: List birds in right-hand column, in sequence (1, 2, 3), regardless of the location of the species in center column. If, for example, a bluejay is the first bird observed, list it in the first blank, etc. The scale is based on **number of different species** observed.

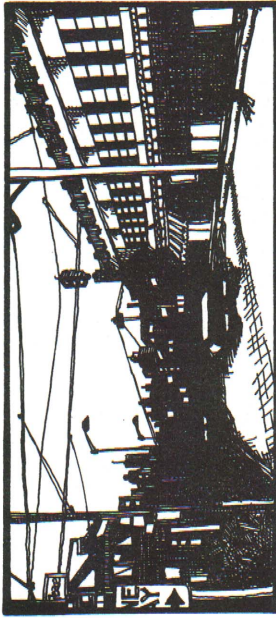
ACKNOWLEDGEMENT

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A Guide for Classifying Your Natural Environmental Quality

Characteristics of Your Environment

Birdlife Species...



POOR

Environment primarily concrete and buildings, little or no vegetation; lots of people — noise and polluted air.

...normally found

Pigeon
House sparrow
Starling
Chimney swift
Nighthawk

...that you see

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

+

+



FAIR

Trees sparse, some green lawn; sprinkling of small shrubs and conifers; fewer people — less noise and cleaner air.

Robin
Grackle
Bluejay
Red-wing black bird
Cardinal

- 6 _____
- 7 _____
- 8 _____
- 9 _____
- 10 _____

+

+



GOOD

Trees, shrubs and lawns more plentiful; nesting boxes provided; less concentration of people and noise — cleaner air and water.

Chipping sparrow
House wren
Cedar waxwing
Downy woodpecker
White-breasted nuthatch

- 11 _____
- 12 _____
- 13 _____
- 14 _____
- 15 _____

+

+



EXCELLENT

Good variety of habitat, open fields, shrub boarders, tree clusters, and woodlots; less people than above, good quality water and air, little noise.

Goldfinch, Hummingbird, Pheasant, Bluebird, Chickadee, Morning dove, Rose-breasted grosbeak, Brown thrasher, Baltimore oriole, Tree sparrow, Purple martin, Barn swallow, Crow, Junco, Flicker, etc.

- 16 _____
- 17 _____
- 18 _____
- 19 _____
- 21 _____
- 22 _____
- 23 _____

SUGGESTS OVERLAP OF CHARACTERISTICS AND SPECIES BETWEEN ZONES

How Can You Improve Your Environment?

So your rating wasn't too good and you want to improve your natural birdlife habitat? To find out why birdlife is not attracted to your neighborhood, let's examine why some species are. Check the reason(s) why birdlife are attracted to your backyard.

- Migration?
- Just passing through?
- Bird Feeder?
- Bird Bath?
- Bird House?
- Natural food available?
- Adequate cover (protection from weather and predators)?
- Natural nesting sites available?
- Protection from abnormal predation?

The above check list progresses from the simplest, and most artificial causes for birdlife attraction to the most complete, natural conditions for attracting birds. If you weren't able to check the last half of this list, your birdlife habitat is considerably limited. Bird feeders are poor substitutes for a good natural habitat, for they provide sustenance only when little natural food is available. To have a continuous bird population (permanent bird residents), it is necessary to have a constant supply of "natural" food and adequate cover for protection and nesting sites.

To increase the number of permanent birdlife species in your neighborhood, find a good book on birds at the library and probe the needs of each bird listed. Discover where blue jays go at night, or the natural habitat of the chickadee. To attract other birds, determine their natural habitat and then try to duplicate it on your home community grounds.

If you live in the heart of a large city, it is going to be difficult to attract a variety of birds. Community effort directed at creating open space and green, planted areas, through building razing, clean-up, etc., is one way to do it. Developing, and maintaining corridors of green vegetation leading into the city with green belts circling the city will encourage birdlife. Replanting trees and shrubs along city streets has been neglected in most communities in recent years. Street improvements, disease, and insects have ruined some of our tree-lined streets. The demise of our trees has removed birds, making replanting even more important.

While some forms of birdlife can be attracted almost overnight by planting groundcover and shrubs, other birds require habitat that must be

developed over a period of several years. This is why it is important to "plan with nature" when changing the use of land, rather than clearing off all vegetation and "starting from scratch."

ATTRACT BIRDS—PROVIDE COLOR

For those who want to encourage birdlife in their own backyard, Kellogg Bird Sanctuary¹ ornithologists offer some suggestions. They list many kinds of trees, shrubs and vines which not only add to the attractiveness of your home surroundings, but provide natural food and housing for birds and wildlife. Following is a list of some of these plants and the kinds of birds they attract.

Ground Cover

Wild grape—Fruit dark blue; preferred by most birds in autumn and winter.

Virginia creeper—Small blue berries; deep red foliage in autumn—sapsucker, bluebird, robin, brown thrasher.

Bittersweet—Orange-yellow fruit; seed is vermilion; also used for indoor decorating—bluebird, robin.

Greenbriar—Good wildlife food and cover plant.

Rock cotoneaster—Red berries—variety of birds.

Partridge berry—Red berries persist into winter; colorful, ground cover.

Creeping junipers—Blue berries—attract variety of birds.

Shrubs: Height 3 to 5 Feet

Blackberry—Fruit eaten by a great variety of birds.

Flowering raspberry—Red fruit; good ground cover—variety of birds.

Pfitzer juniper—Evergreen with small fruit—enjoyed by cedar waxwing, purple finch.

Common juniper—Evergreen, fruit eater—waxwing, grosbeak, purple finch.

Coralberry—Red fruit eaten by birds.

Shrubs: Height 5 to 8 Feet

Sargent crabapple—Fruit eaten in winter by a variety of birds.

Honeysuckle—Red and orange "bite sized" fruit.

Red chokeberry—Red fruit; available from July to December—waxwing, meadow lark, chickadee.

Viburnum—Fruit eaten by brown thrasher, waxwing, cardinal, robin.

¹ Hickory Corners, Michigan.

Shrubs and Trees: Height 8 to 15 Feet

- Gray dogwood—Blue berries—eaten by purple finches (see flowering dogwood below).
- Highbush cranberry—Red clusters of soft berries until late winter—grouse.
- Buckthorn—Small black berries—catbird, pileated woodpecker, brown thrasher.
- Autumn olive—Red berries eaten by game birds—cedar waxwing, robin, grosbeak.
- Buffalo berry—Red or yellow berries—catbird, brown thrasher.
- Amur maple—Seeds eaten—grosbeak, nuthatch, purple finch.
- Privet—Fruit eaten—robin, quail.
- Staghorn sumac—Dark red berries persist all winter; foliage orange-to-scarlet in fall—cardinal, catbird, phoebe, robin, starling.

Trees: Height over 15 Feet

- Flowering crabapple—Arnold, radiant, white angel, van eseltine, zumi calocarpa, snowdrift, royalty; beautiful blossoms in spring—fruit enjoyed.
- Sassafras—Fruit dark blue; good autumn color from red to orange—flicker, phoebe, brown thrasher.
- Canaertii cedar—Fruit pale blue; compact, rich evergreen good for winter roosts—variety of birds.
- Flowering dogwood—Fruit crimson; autumn foliage dark red; spectacular flowers in spring—cardinal, evening grosbeak, robin, wood thrush, waxwing.
- Mountain ash—Orange berries in winter—grosbeak, cedar waxwing.
- Wild cherry—Cherries enjoyed by birds in fall—robin, waxwing, grosbeak, starling.
- Birches—Catkins contain seed—chickadee, pine siskin, redpoll.
- Pin oak (all oaks)—Acorns eaten by blackbird, chickadee, goldfinch, bluejay.
- Hawthorn (thornapple)—Washington, lavelle, cockspur, grosbeak, robin, waxwing, woodpecker.

* * *

The above species of vegetation provide excellent food and nesting sites for birdlife. Evergreen planting (pines, spruces, firs) should also be considered since these species provide nesting sites and protection, especially important in the winter months.

Summary

Birdlife can be a good indicator of natural environmental quality. The more species found within a given area, the more habitat that environment is providing for the birds to live and raise their young. This suggests a higher quality natural environment for man.

One must recognize that this criteria of measurement of our environment is general. Many other considerations must be included in a total assessment of environmental quality.

Where do we observe birds in the city? Unless we provide more suitable habitats, it will only be in parks, private sanctuaries, and neglected waste lands where a few trees and weeds make a stand against the spread of concrete and pollution.

Cities can be made hospitable for a diversity of birdlife. When we fully realize the importance of clean air, water and green space (which includes a variety of trees and shrubs) for birdlife and other creatures, we might also recognize its importance for man and plan accordingly.

SUGGESTED READINGS

- *American Wildlife and Plants: A Guide to Wildlife Food Habits*, Martin, Alexander C.; Zim, Herbert S.; Nelson, Arnold L.
- *Handbook of Birds of Eastern North America*, Chapman, Frank M.
- *A Guide to Field Identification: Birds of North America*, Robbins, Chandler S.; Bruun, Bertel; Zim, Herbert S.
- *A Field Guide to the Birds*, Peterson, Roger Tory.
- *A Field Guide to Trees and Shrubs*, Petrides, George A.
- *Birds—Golden Nature Guide*; Golden Press, N.Y.
- *How to Watch Birds*—Barton, Roger; Bonanza Books, New York.

U.S. GOVERNMENT PRINTING OFFICE

- *Autumn Olive, for Wildlife and other Conservation Uses*, U.S.D.A.; Leaflet No. 458.
- *Invite Birds to your Home*, U.S. Department of Agriculture; Soil Conservation Service; PA-940.

MSU PUBLICATIONS

- *Wildlife—an Extra Gift from the Land*, F-280.
- *Beautiful Home Grounds*, E-425. 30¢ ea.
- *Ornamental Deciduous Trees for Mich.*, E-552. 15¢ ea.
- *Ornamental Evergreens*, E-426. 20¢ ea.
- *Ornamental Vines for Mich. Homes*, E-492. 15¢ ea.
- *Planning for Residential Properties*, E-549. 15¢ ea.
- *Familiar Trees of Michigan*. E-616.