



The Aerial City: Urban Birds, Bats, and Denizens of the Sky



Kevin Michael Anderson, Ph.D.
Austin Water – Center for Environmental Research

Like a bird on the wire
Like a drunk in a midnight choir
I have tried in my way to be free
- Leonard Cohen



Nature in Cities: The Open Question and The Degradation Myth

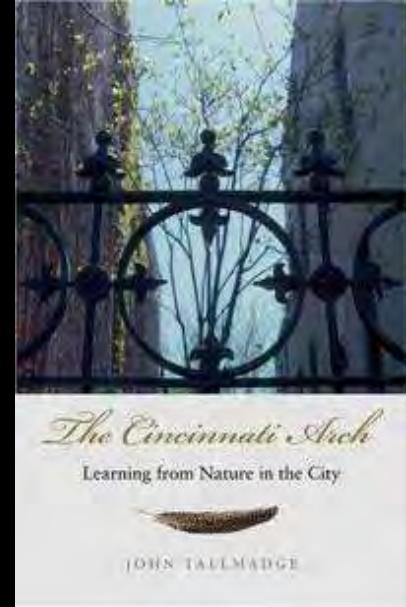
John Tallmadge *The Cincinnati Arch: Learning from Nature in the City* (2004)

Urban nature is not sublime...There's too much sterility in the form of roofs and pavement, and, oddly enough, there's also too much wildness, too many weeds and wooded borders and tangled banks, not to mention vacant lots going to brush.

Of course, "wilderness" won't do to describe such landscapes either. Despite the degree of wildness, there's too much human impact, too many alien species, too few large animals to meet the legal and cultural criteria.

The fact is that urban landscapes are just too mixed up, chaotic, and confused to fit our established notions of beauty and value in nature.

Maybe it's not really nature at all, not a real ecosystem, just a bunch of weeds and exotics mixed up with human junk.



Perspectives on Urban Nature and the American City

The Sacred and the Mundane

Wilderness and the City

Natural vs. Artificial

Pristine vs. Degraded

Native vs. Non-native

Invasive
Non-native
Species

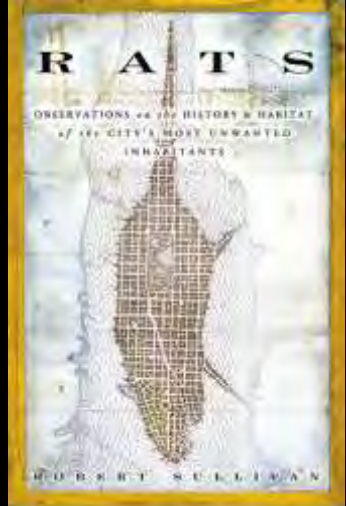
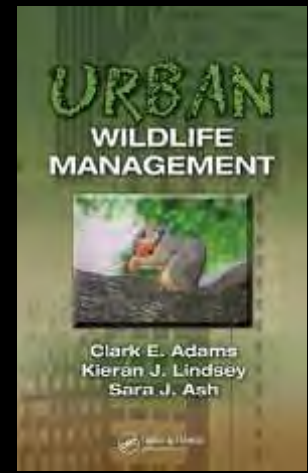


Once a rock dove,
now the winged rat
of the city

Non-native species
and Biodiversity?

Urban Wildness - The Challenge of Urban Wildlife

This urban fauna is judged favorably when it in some way fulfills our expectations of wild nature or condemned as pestilent when it fails to follow the narrative for good fauna in the city – and stay in the proper places for nature in the city.



This narrative of urban wildlife declares that transgressive coyotes, rats, grackles, and pigeons are urban pests that further degrade the city...



...but nesting red-tailed hawks and peregrine falcons are redemptive wild additions to the urban scene.



Commensal vs. Mutual

Commensalism, in ecology, is a class of relationships between two organisms where one organism benefits from the other without affecting it.

This is in contrast with mutualism, in which both organisms benefit from each other.

Down Here Below

Pale Male the famous red-tailed hawk
Performs wing stands high above midtown Manhattan
Circles around for one last pass over the park
Got his eye on a fat squirrel down there and a couple of pigeons
They got no place to run they got no place to hide
But Pale Male he's cool, see 'cause his breakfast ain't goin' nowhere
So he does a loop the loop for the tourists and the six o'clock news

Got him a penthouse view from the tip-top of the food chain, boys
He looks up and down on fifth avenue and says "God I love this town"
But life goes on down here below
And all us mortals struggle so
We laugh and cry
And live and die
That's how it goes
For all we know
Down here below

Pale male swimmin' in the air
Looks like he's in heaven up there
People sufferin' everywhere
But he don't care
But life goes on down here below
And all us mortals, struggle so
We laugh and cry

Steve Earle
Washington Square Serenade 2007



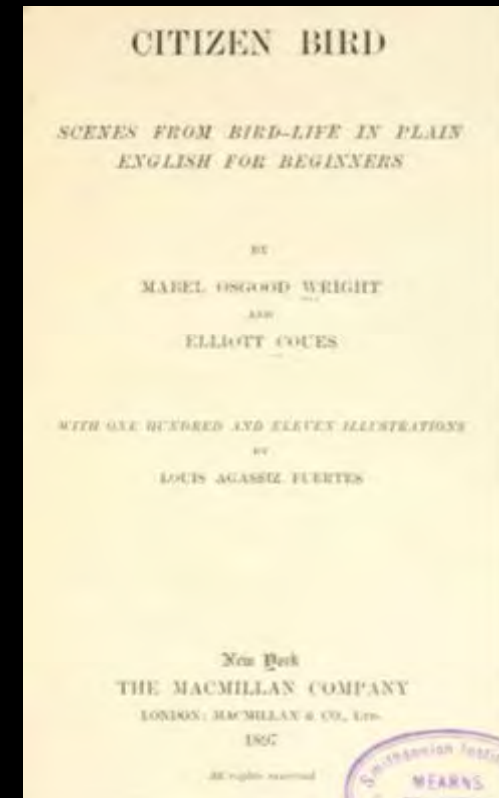
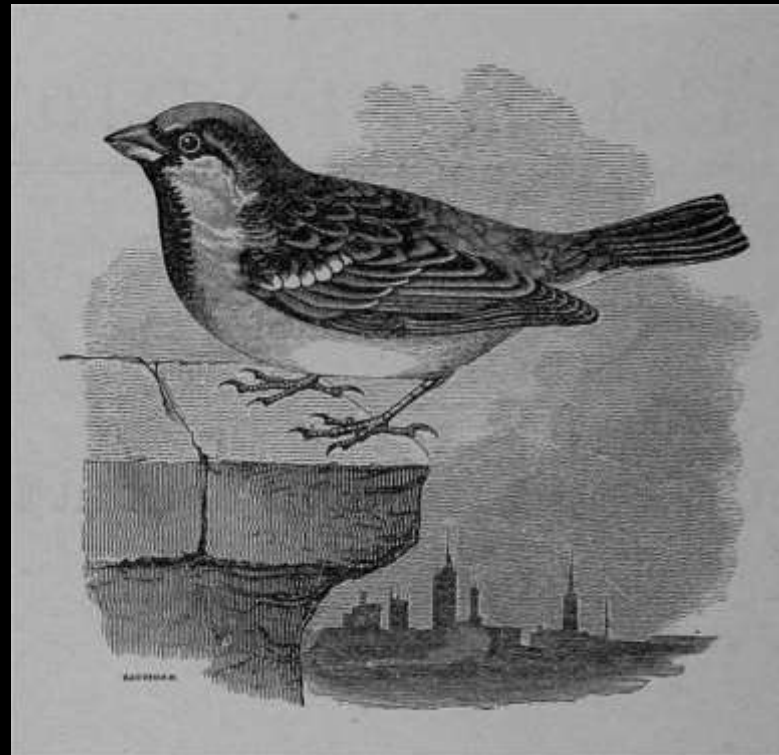
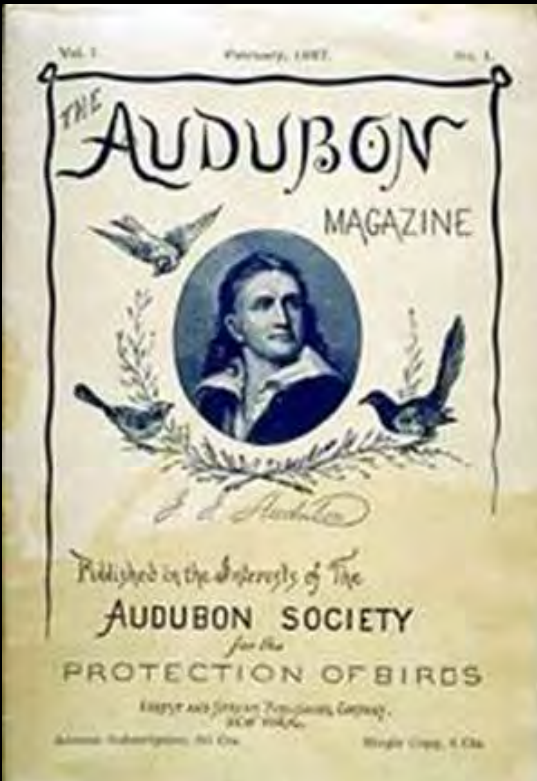
All of the City is habitat

The mobility of urban wildlife allows them to exploit the entire city as habitat.

None are more mobile than the denizens of the air...



American Cities and Birds



American Ornithology and Birdwatching – Science and Sentiment

Bird Science - American Ornithologist's Union 1883 - Elliot Coues

- Founded in 1883
- Checklist and official “proper” names

Bird Protection - National Association of Audubon Societies

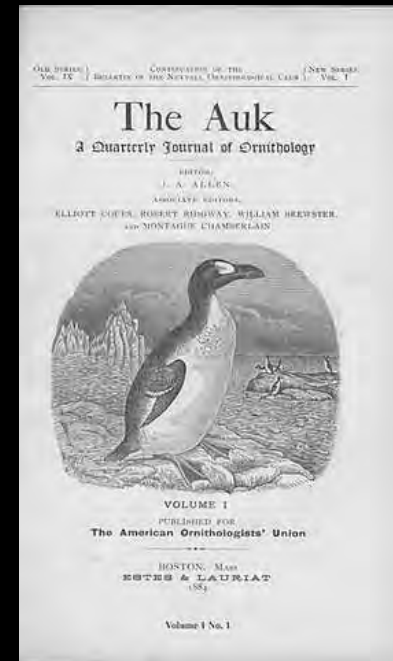
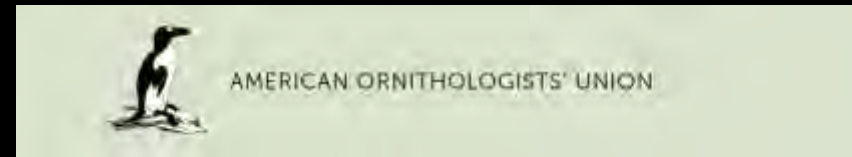
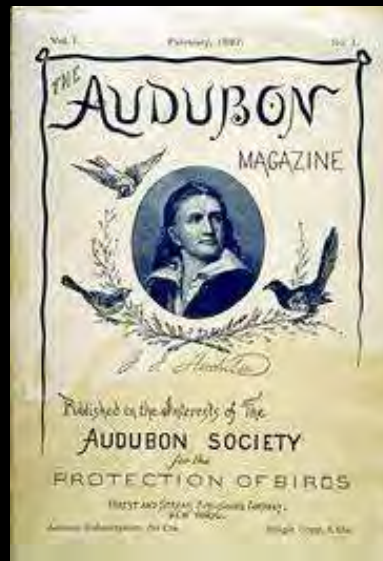
- Founded 1886 (reorganized 1896) – George Bird Grinnell
- Audubon Societies in 37 States by 1916
- Junior Audubon Clubs in schools 1911 [205,138 junior members 1916]



Elliott Coues
1842-1899

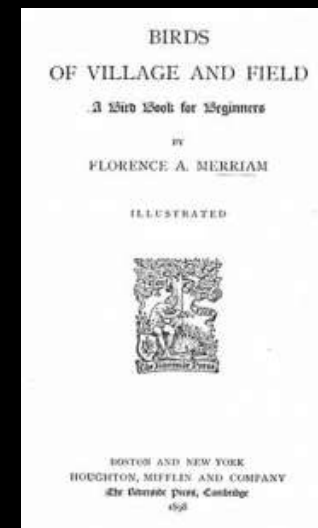
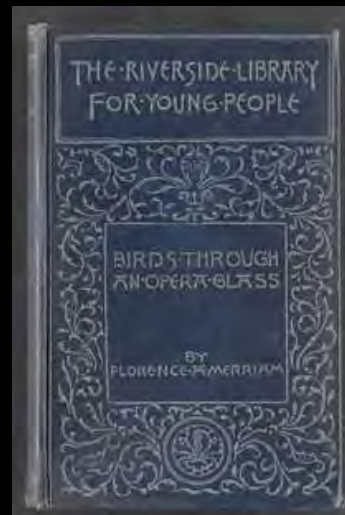
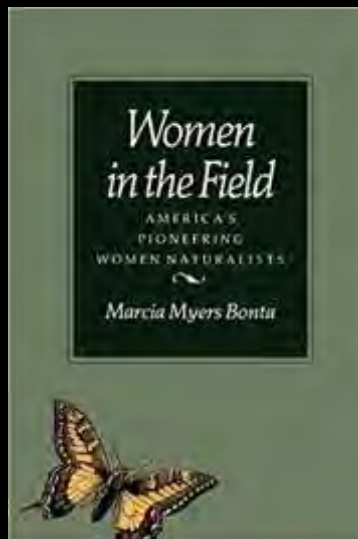


George Bird Grinnell
1848-1938



Birdwatching

Florence Merriam Bailey 1863 – 1948










The earliest field guide in the US was *Birds through an Opera Glass* (1889)

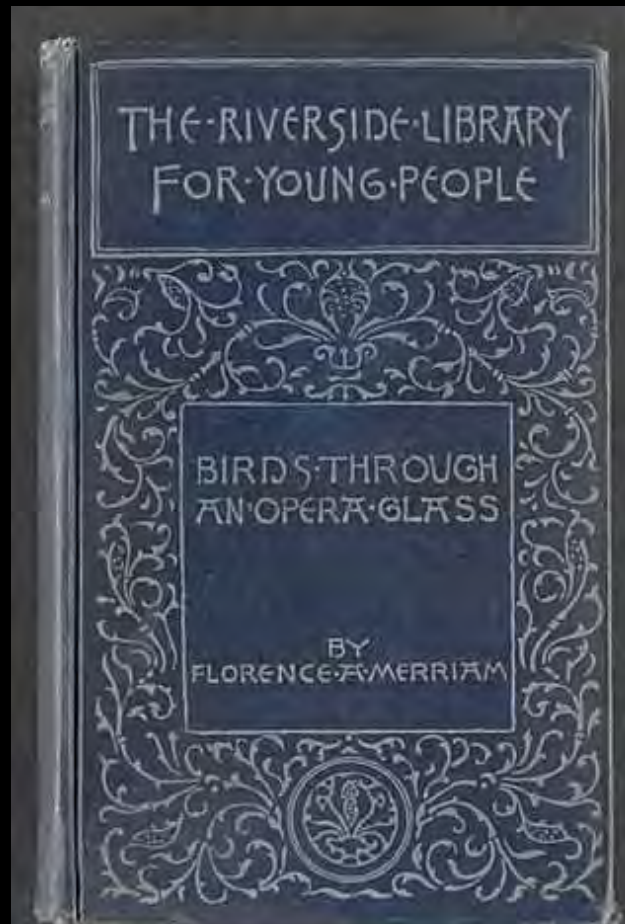
To be a birdwatcher only four things are necessary – “a scrupulous conscience, unlimited patience, a notebook, and an opera glass”

Merriam followed up with a second bird guide of somewhat wider scope (more than 150 species) in 1898 with her *Birds of Village and Field*, another book written for the beginner.



xxxiv FIELD COLOR KEY

2. Small; under parts white, with salmon-red patches on sides of breast, wings, and tail. Tail, when open, fan-shaped, showing salmon patches.  p. 309. REDSTART.
1. Whole head not black.  p. 327. HOODED WARBLER.
3. CROWN BLACK.
4. Throat and breast black; forehead and cheeks yellow.
4. Throat and breast yellow.
5. Back and under parts yellow.
6. Wings and tail black ('Wild Canary').  p. 145. GOLDFINCH.
6. Wings and tail not black. Migrant.  p. 339. WILSON'S WARBLER.
5. Back olive; sides of throat black. Hunts near ground. Song, a loud ringing *klur-see, klur-see, klur-see*.  p. 329. KENTUCKY WARBLER.
3. CROWN NOT BLACK.
7. Crown and throat red, breast black, belly yellow.  p. 208. YELLOW-BELLIED WOODPECKER.
7. Crown and throat not red.
8. Rump conspicuously white or yellow.
9. Rump white, breast with black crescent. Large.  p. 127. FLICKER.



BIRDS
OF VILLAGE AND FIELD

A Bird Book for Beginners

BY

FLORENCE A. MERRIAM

ILLUSTRATED



BOSTON AND NEW YORK
HOUGHTON, MIFFLIN AND COMPANY
The Riverside Press, Cambridge
1898

Urban Natural History – Science and Sentiment

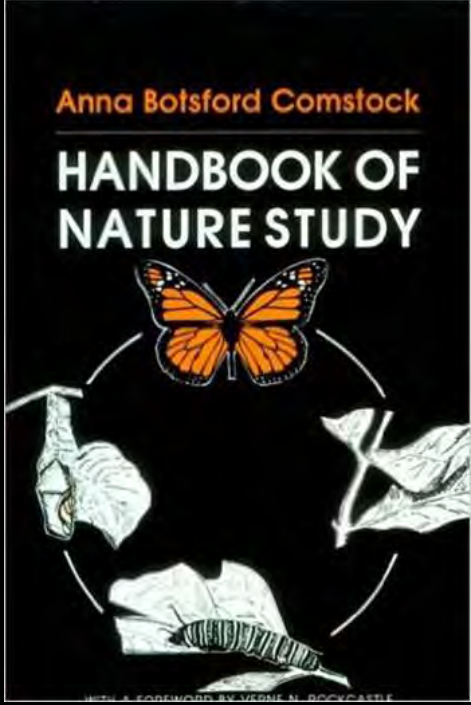
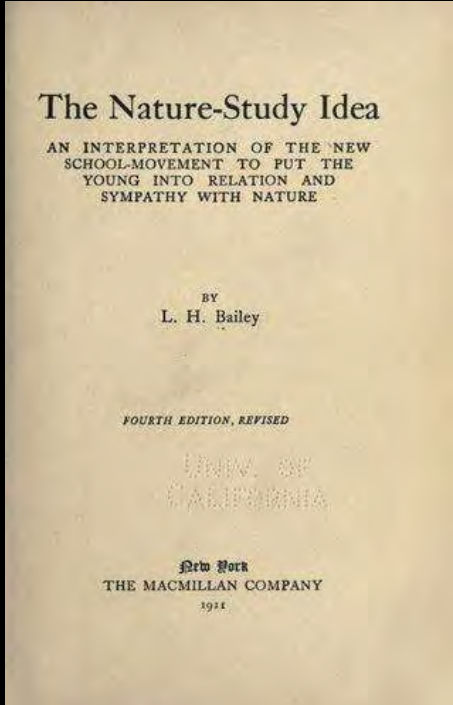
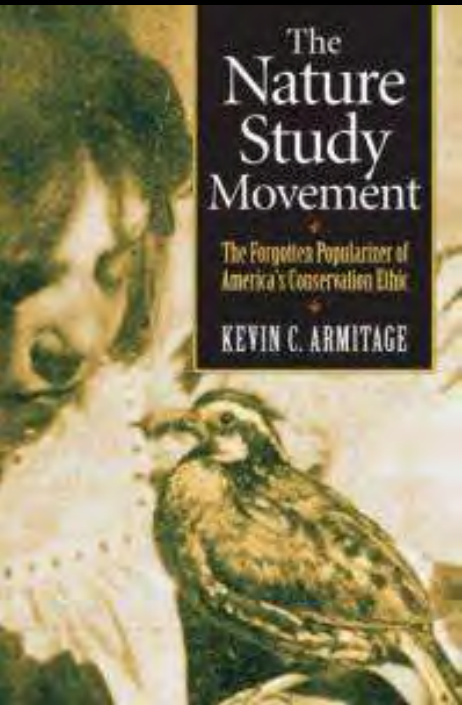
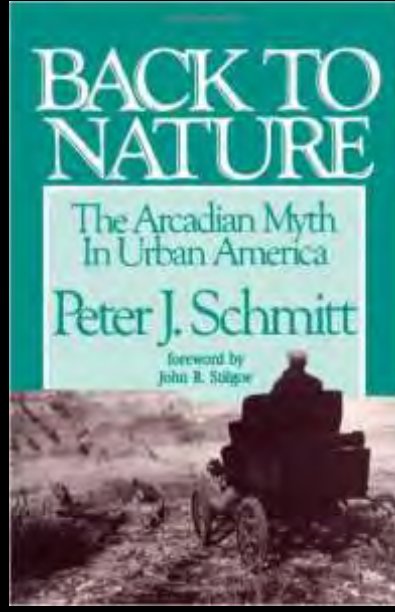
The Nature Study Movement 1890-1930

Liberty Hyde Bailey, *The Nature-Study Idea* (1903)

Anna Comstock defined the idea extensively in her book, *Handbook of Nature Study* (1911) "Nature Study is for the comprehension of the Individual life of the bird, insect or plant that is nearest at hand."

Tension with science education - "the nature study movement...reflected the scientific aspirations as well as the spiritual longings of the professional middle class."

"Amalgam of Science and Sentiment" Armitage 2009



Birds and Nature Study – Nature behaving properly

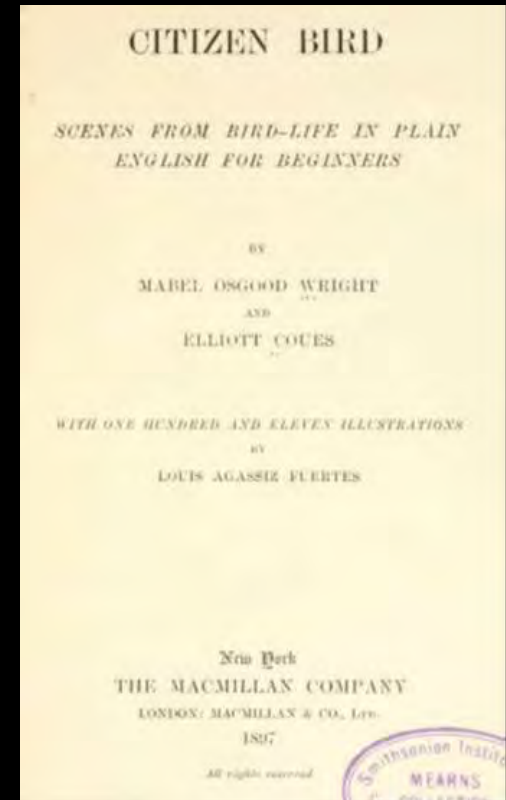


Bird Stories (1921) Christian ornithology as introductory science. For city children to learn to learn scientific observation and touching parables of virtues

Nature Study as civic and moral education

Urban Nature must teach civic and moral lessons

American species vs. Immigrant species



Citizen Bird (1897) Mabel Osgood Wright and Elliott Coues

About city children learning scientific terminology on an abandoned farm in New England

“industrious native birds...are good citizens...it is all those Sparrows in the city that made me think all wild birds must be ugly.”

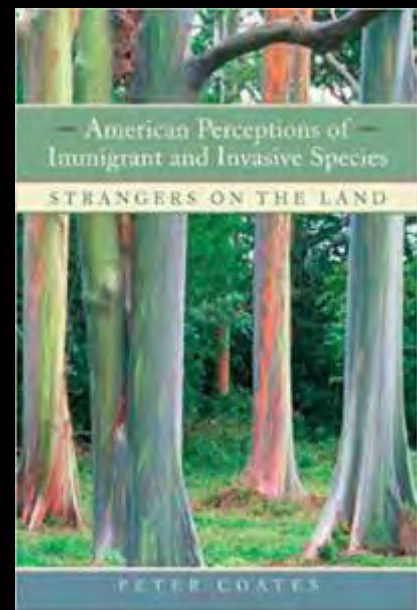
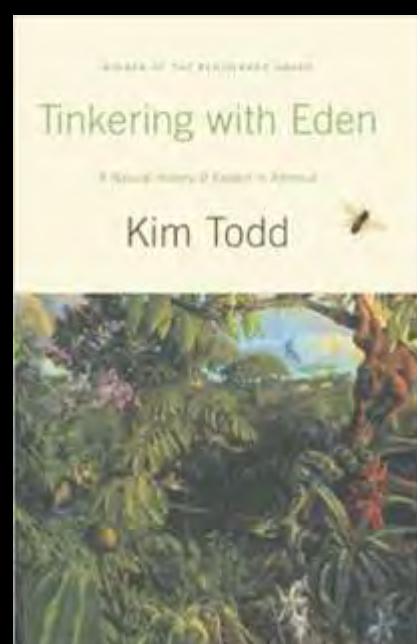


Good Native Birds and Bad Urban Birds – The Sparrow War

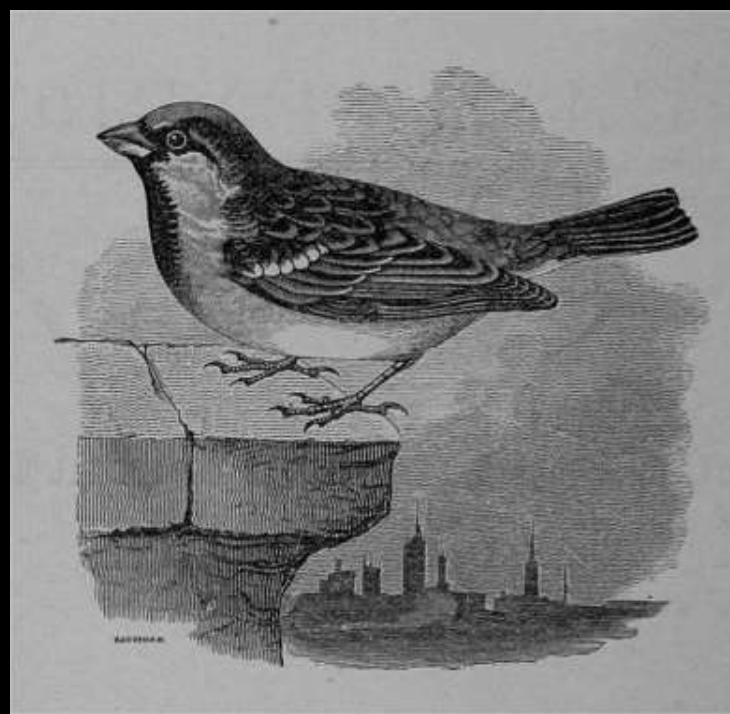
The American Acclimatization Society was a group founded in New York City in 1871 dedicated to introducing European flora and fauna into North America for both economic and cultural reasons. The group's charter explained its goal was to introduce "such foreign varieties of the animal and vegetable kingdom as may be useful or interesting."

Eugene Schieffelin 1827-1906

In 1860, he first released "English" house sparrows in New York as a biological control for cankerworms on American elms and other street trees.



The English Sparrow.
In 1860 a dozen English sparrows were imported by Mr. Eugene Schieffelin, of New York. He set them free near Madison Square, and this he did for several successive years. A number of others followed his example, among them the Park Commissioners of New York. In 1868 the City Government of Boston imported about 200. These all died, and the next year more were brought over, of which but ten lived. The City Government of Philadelphia imported 1,000 in 1869 and about the same time two dozen were let loose in Monumental Square, Charleston, S. C. A history of North American birds says:
At the time of their introduction the shade trees in the parks and squares of New York, Philadelphia, Brooklyn, Newark and other places were greatly



The Old-World Sparrow - William Cullen Bryant
1869

We hear the note of a stranger bird
That ne'er till now in our land was heard.
A winged settler has taken his place
With Teutons and men of Celtic race;
He has followed their path to our hemisphere
The Old-World Sparrow at last is here.

He meets not here, as beyond the main,
The fowler's snare and poisoned grain,
But snug-built homes on the friendly tree;
And crumbs for his chirping family
Are strewn when the winter fields are drear,
For the Old-World Sparrow is welcome here.

The insects legions that sting our fruit
And strip the leaves from the growing shoot,
A swarming, skulking, ravenous tribe,
Which Harris and Flint so well describe
But cannot destroy, may quail with fear,
For the Old-World Sparrow, their bane, is here.



Good Birds and Bad Urban Birds

Invasive Species - In 1889, the U.S. Bureau of Biological Survey devoted its first bulletin entirely to “The English Sparrow in North America” and compiler Walter Barrows concluded that these “foreigners” were “a curse of such virulence” that they should be systematically and completely destroyed.

Furthermore, it should be a crime to kill the shrike, sparrow hawk, screech owls, bluejays, or grackles, since they eat English sparrows.

An official sparrow-killing day, with Boy Scouts taking the lead, was proposed in 1916.

“The English sparrow...is a bird of the city, rich in city vices, expedients, and miseries. The farmer’s son who takes to drink and the East end makes a hard character. The sparrow who has taken to a similar form of existence is equally despicable.”

Frank Bolles, Nuttall Ornithological Club, 1892

GOOD-BYE SPARROWS!



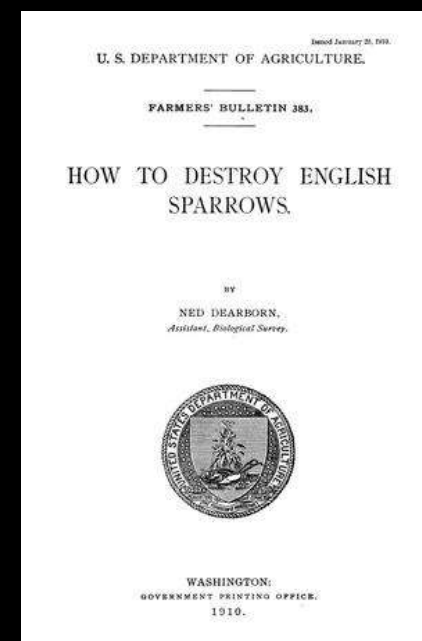
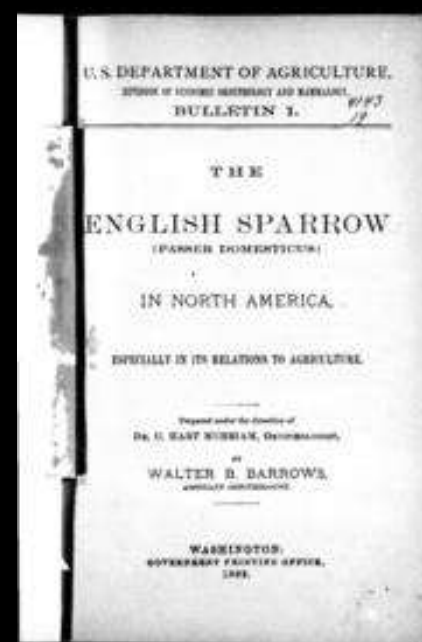
Sparrows drive away the song birds and spoil your flower garden. An Ever-Set Trap is a positive way to get rid of them.

Send for one today. The new low price direct to you is only \$4.75 pre-paid. Costs nothing to operate. Never fails to work. Lasts indefinitely. Your money back if you are not unqualifiedly satisfied. More information mailed upon request.

Also other traps for destructive animals.

EVERSET TRAP CO.
DAVENPORT, IOWA

Dept. A



Good Native Birds and Bad Urban Birds – Invasive Foreigners

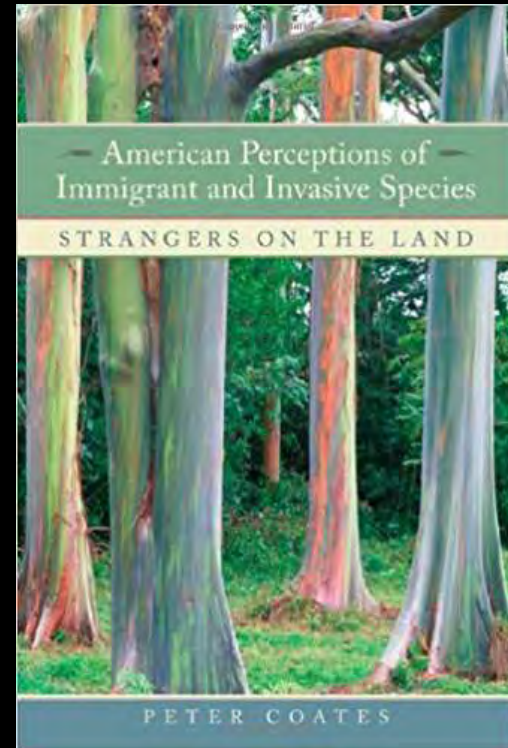
The Poet may sing in the sparrow's praise,
But our great ornithologist, Dr. Coues, says,
In the language of truth and very plain prose,
That the sparrow's a nuisance and the sooner he goes,
The better we're off, so to me it's quite clear,
That the Old World sparrow is not needed here.

He defiles our porches, there's no denying that;
He has ruined my wife's dress and spoiled her hat.
He hangs round the bird cage to pilfer the seed,
And gives the canary a foul insect breed.
He never eats worms, let us tell it abroad,
This old World sparrow is a terrible fraud.

Fred Mather, *Forest and Stream Magazine* 1881

Sparrows to right of them –
Sparrows to left of them –
Sparrows in front of them –
Copulate freely.

Eliot Coues, "The English Sparrow" 1877



Fears that a tightly woven racial, social, moral, economic, and sexual order was jeopardized by mass immigration and burgeoning cities were thus projected onto these "disgusting exotics" whose *furor amatorius* caused the more fearful to anticipate the worst: common ownership of wealth and "free love"

In 1890, Schieffelin released 60 starlings in Central Park.

The Myth of Shakespeare's Birds



“From the bird-lover’s point of view, the Starling is a decided acquisition to the bird-life of our cities, where its long-drawn, cheery whistle is in welcome contrast to the noisy chatter of House Sparrows.”

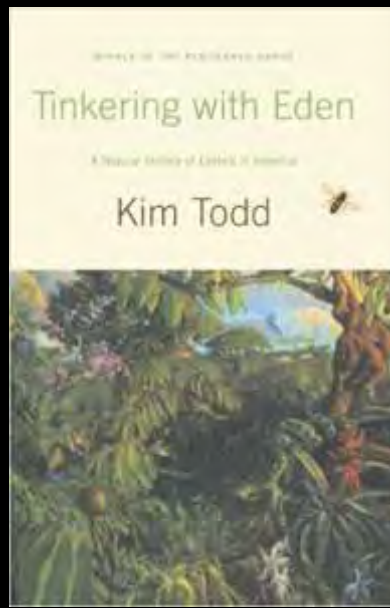
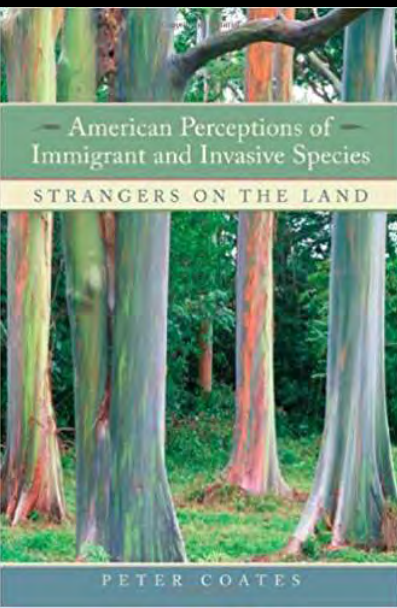
Frank Chapman, American Museum of Natural History

AMERICAN ACCLIMATIZATION SOCIETY.

The regular meeting of the American Acclimatization Society was held last evening in the reading-room of the Aquarium, the use of which had been given for the purpose. Mr. Eugene Schieffelin occupied the chair, and Dr. J. W. Greene acted as Secretary. Among the gentlemen present were Messrs. Robert B. Roosevelt, of the Fish Commission; John O. Pennington, of New-Jersey; Eugene Keteltas, John C. Mills, Edward Schell, S. R. Bunce, Edgar De Puyster, Wilson De Puyster, Mr. Conklin, of the Central Park Museum, and others. Mr. Conklin read a paper on acclimatization, with special reference to birds. He detailed the efforts made in this country to introduce foreign birds. In 1864, he said, the Commissioners of Central Park set free 50 pairs of English sparrows, and they had multiplied amazingly; Mr. Joshua Jones had freed English chaffinches, blackbirds, and Java sparrows in the Park, but unfortunately their numbers were so small the birds were lost sight of; in 1874, Mr. Henry Reiche set loose 50 pairs of English skylarks, but they all crossed the East River, and settled near Newtown and Canarsie. The Cincinnati Acclimatization Society had successfully introduced the skylark there, and it was now becoming abundant in the neighborhood of the city. Last July the Acclimatization Society freed in the Park some starlings and Japanese finches; Mr. John Sutherland had done the same with some English pheasants. It was expected that they would all prosper. Mr. Conklin suggested that renewed and organized efforts should be made to acclimatize the English titmouse, chaffinch, blackbird, robin redbreast, and the skylark—birds which were useful to the farmer and contributed to the beauty of the groves and fields. Mr. Robert



“I could whip all my featherless foes, but the Sparrows proved too many for me, by a large majority.”
Eliot Coues 1897



Contemporary Urban Invaders – Plants vs. Birds

Invaders

of
Texas

a Citizen Science Program to Detect and Report Invasive Species

“Invaders of Texas” website was created by the Lady Bird Johnson Wildflower Center as a tool for mobilizing the public against non-native invaders and the website employs the rhetoric of war and a resistance composed of “citizen scientists” defending the homeland.

The Invaders of Texas Program is a campaign whereby volunteer "citizen scientists" are trained to detect the arrival and dispersal of invasive species in their own local areas.



THE WILD PARROTS OF TELEGRAPH HILL

A FILM BY JUDY IRVING

TOP 10 FILM OF THE YEAR

— *San Francisco Chronicle* National Film Critics Poll

"...that rare documentary that has
romance, comedy, and a
surprise ending that makes you feel
as if you could fly out of the theater!"

— *San Jose Mercury News*

"This is a Gem!"

— *Richard Roeper,
Ebert & Roeper*

"Gorgeous!"

— *The New York Times*

DVD



Cherry-headed (red-masked) conures

Urban Hazards for Birds

Bird experts call for community action after 398 birds crash into Galveston building

Conservation experts are asking Houston area residents to do more to protect migratory birds, after a flock of 398 birds crashed into a Galveston high rise building on Wednesday night. The birds fly at night, and lights left on in the building may have disoriented the warblers on Wednesday. The evening's stormy weather meant the birds were also flying lower than normal.



MINNEAPOLIS, Minn. -- In early 2018, the Super Bowl will travel to Minneapolis, and the focus will be on the Vikings' shiny new stadium, a sparkling, glassy structure. But there's one problem with the stadium: It's killing a bunch of birds who are being tricked by the reflective glass on the outside of the stadium walls.





Austin and Birds



"Bird's Eye View of Austin" 1890

Map of Austin Texas

Map of Austin Texas

Map of Austin Texas

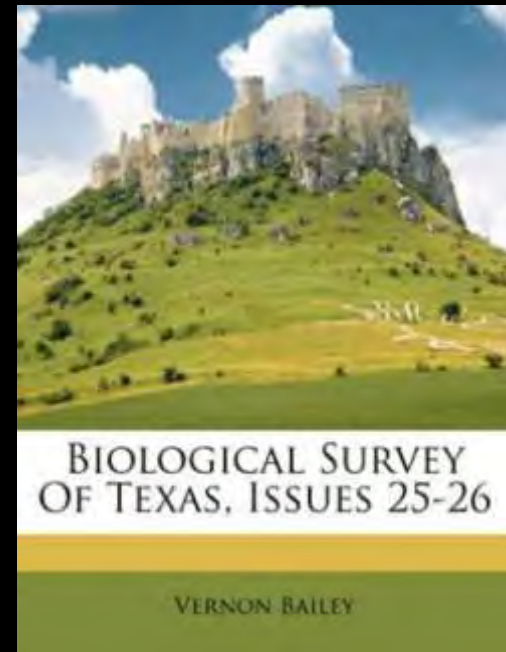
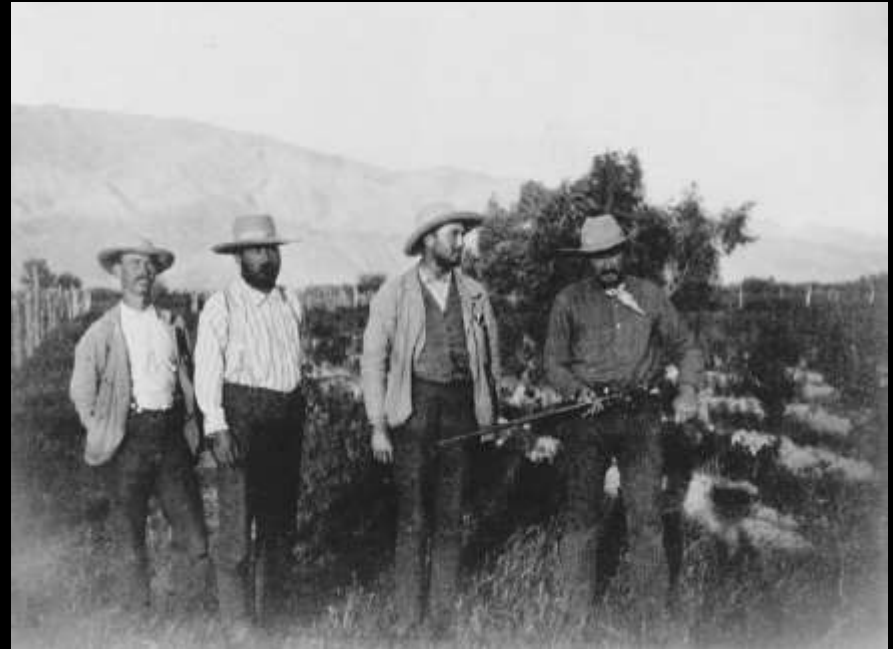


HYDE PARK

**PANORAMIC VIEW OF
AUSTIN, TEXAS.**

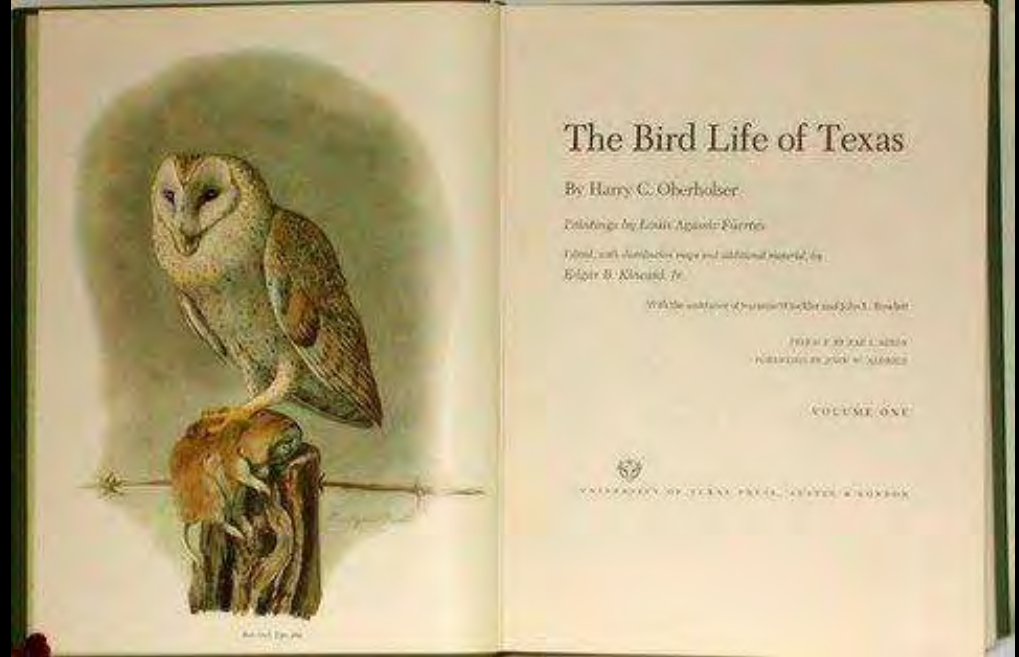
1890. This map is published under the name of the United States
The Commission on the subject of the city of Austin
It is a panoramic view of the city of Austin, Texas, showing the
The Commission on the subject of the city of Austin
The Commission on the subject of the city of Austin
The Commission on the subject of the city of Austin

Biological Survey of Texas 1889-1905 – Vernon Bailey



Vernon Orlando Bailey 1864–1942

The field work for the survey was conducted under the direction of the US Bureau of Biological Survey and was led by Vernon Bailey. In 1889 Bailey first came to Texas. He returned in 1892, 1899, 1900-1902, and 1904, publishing "The Biological Survey of Texas" in 1905.



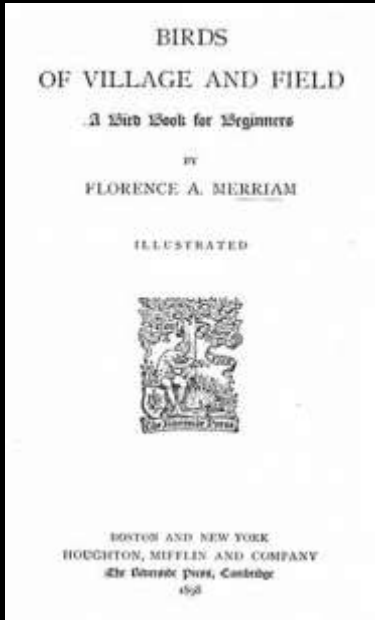
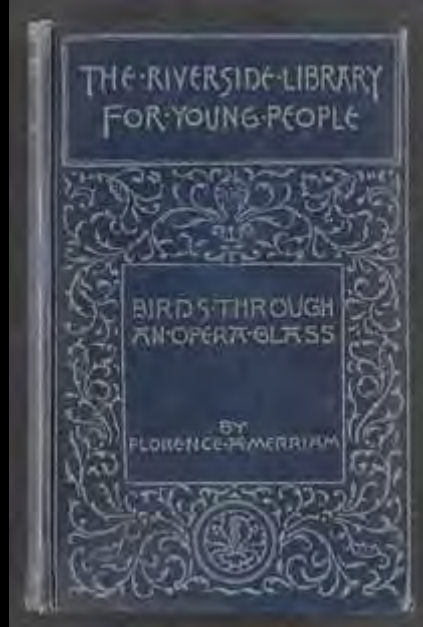
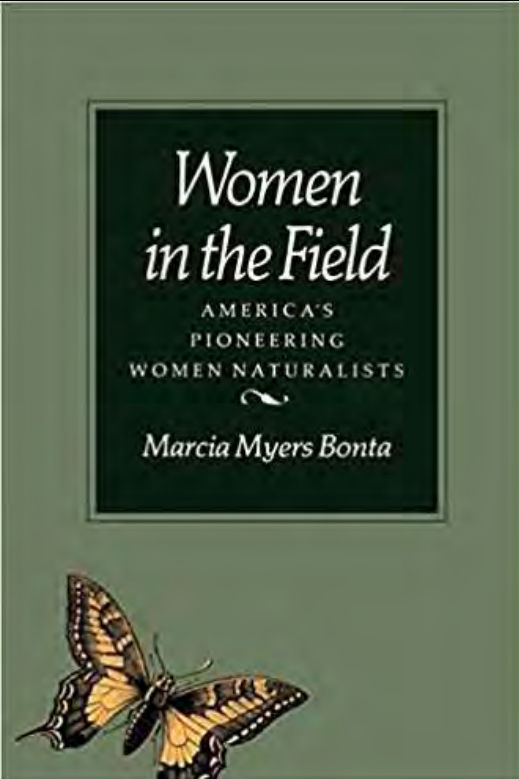
An ornithologist accompanied Bailey to survey Texas birds - Harry Church Oberholser

But his *Bird Life of Texas*, was posthumously published in 1974 by his longtime editor Edgar B. Kincaid.



The Other Ornithologist with Bailey

Florence Merriam Bailey 1863 – 1948

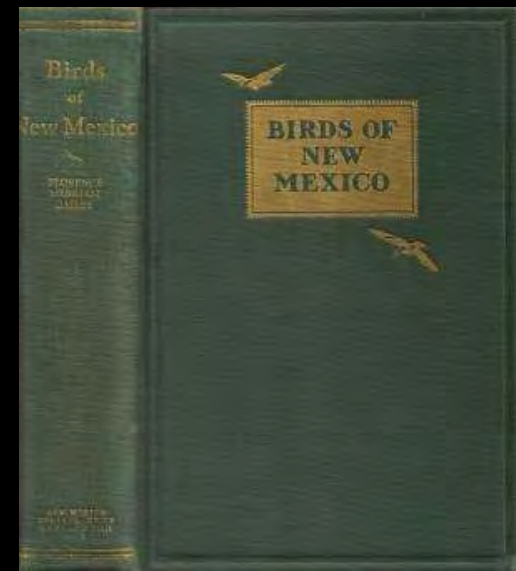
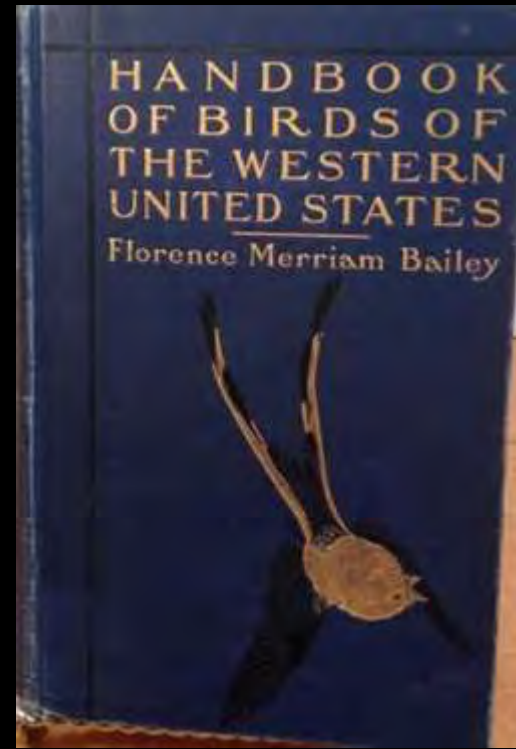


Frank Chapman, *Handbook of Birds of the Eastern United States* 1895

Florence Merriam Bailey

Handbook of Birds of the Western United States 1902

Birds of New Mexico 1928

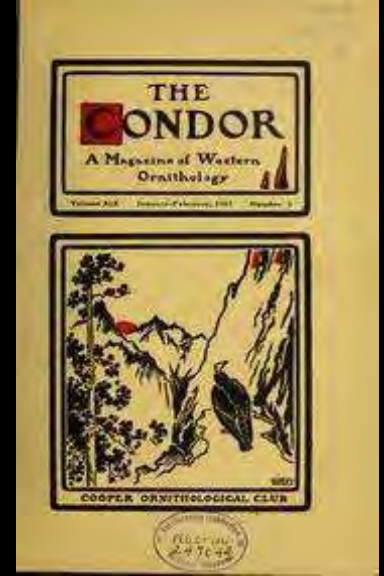


“Meeting Spring Half Way”

Florence Merriam Bailey

The Condor 1916

April 10, 1900



At Austin, where we saw baled cotton in the depot, the birds were a striking mixture of northern, southern, eastern, and western species. We were greeted by the song of the Canyon Wren! Out of place as it seemed in the city, the clear, pure notes rang out as bravely as in a canyon, and the little canyon dweller might easily have strayed over from congenial ground in the first escarpment of the lower Staked Plains, three miles to the westward.

Mockingbirds were everywhere, singing with equal abandon from the chimney above us or the fruit trees close...

Purple Martins were already back from Brazil, their loud twitterings being continually in our ears. Less traveled Western Lark Sparrows were among the commonest birds of the city, singing loudly from the trees of the yards and streets, and a resident Cardinal flew into a bare tree only a few feet from us on the grounds of the State University.



BIRDS OF THE AUSTIN REGION

BY

GEORGE FINLAY SIMMONS, M.A.
Instructor in Zoology in the University of Texas



5724

PUBLISHED BY
THE UNIVERSITY OF TEXAS
AUSTIN

Austin, Birds, and Humans

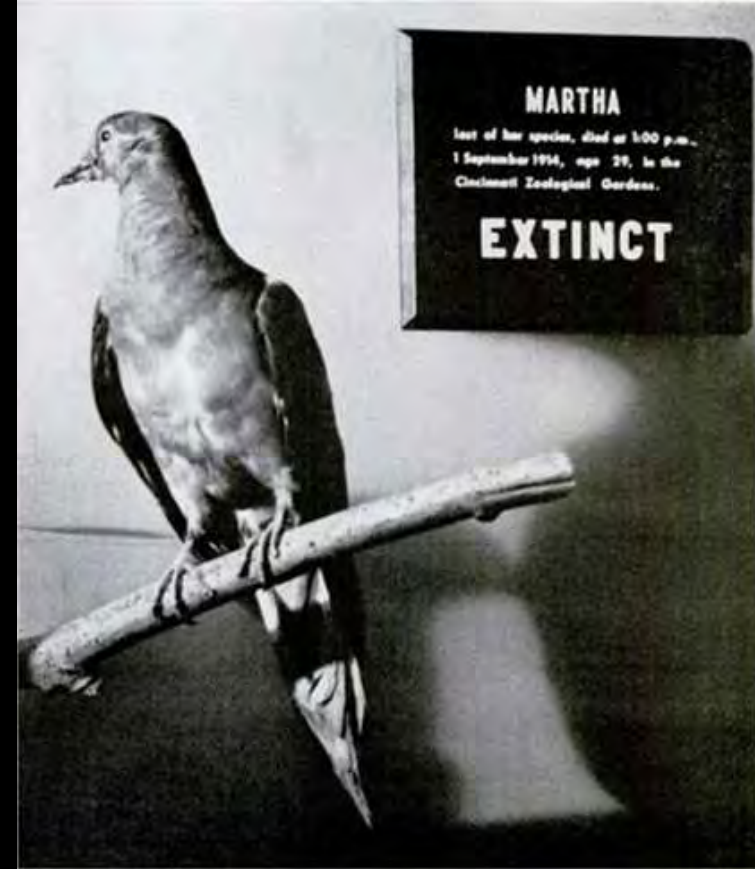
George Finlay Simmons 1895 - 1955

- In 1924 he published *Birds of the Austin Region*.
- No starlings, cattle egrets, white-winged doves, black-bellied whistling ducks
- English sparrow released in Galveston 1867
- Inca dove urban "invasion" 1905-1910



From *Birds of the Austin Region*, George Finlay Simmons, 1924. The University of Texas at Austin.





Prior to forty years ago they were common in the Region, particularly in the extreme eastern part of Travis County where greater crops of acorns could be found.

Then in the fall of 1878 a large migration took place over the city, moving from the southeast toward the northwest...string after string of many thousands of birds passed over; many lit in the tall trees along Barton Creek just above the mouth and in the trees along the south side of the river just above the creek, literally loading down the limbs...

Not a single bird has been seen in the Austin Region since that year.

George Finlay Simmons, *Birds of the Austin Region*

The Texas (Urban) Birder

Roy Bedichek 1878-1959

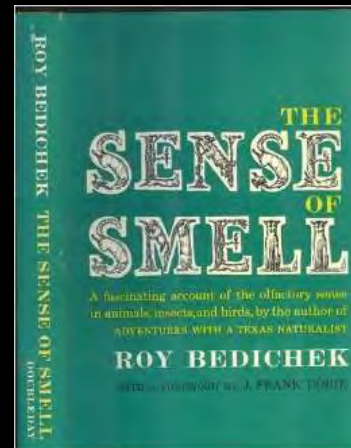
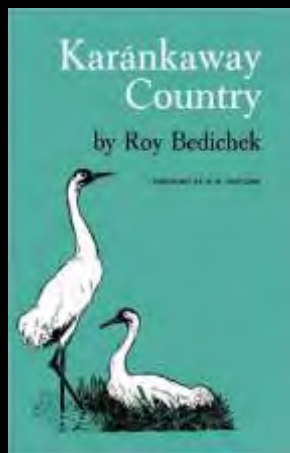
Walter Prescott Webb and J. Frank Dobie arranged for him to spend a year before his retirement writing his first book at Webb's Friday Mountain ranch, about sixteen miles southwest of Austin.

Adventures with a Texas Naturalist (1947)

Karánkaway Country (1950)

posthumous *The Sense of Smell* (1960)

His favorite bird – the Mockingbird



Birds – Urban Co-operatives Commensal or Mutual?

- Cliff swallows – first nest on the “new” Congress Avenue Bridge 600 pairs 1910
- Chimney swift - The first nesting chimney swifts in Austin 1924 at UT football stadium
- Austin moonlight towers kill birds
- Inca doves as urban birds



Bedichek's birding notebooks

12 Sep 1940

Barton Creek above Zilker Park, Austin Tex

Cool, clear still

Cardinal (heavy black over base of bill)

Blue jay

White-eyed vireo—Peterson fails to call attention to distinctly yellow lores to distinguish this species from blue headed, which has white lores.

White-eyed is all over a yellowish bird

Turkey Vulture

Schutze says coffee growers in South am object to martins destroys coffee

Thorpe Police Chief has 2 martin boxes on hill opposite Barton Spgs grocery—Schutze says he raised about 50 martins this year.



Without ever having been seriously ill, he died suddenly of heart failure on May 21, 1959.



50 YEARS OF BIRDING



MARGIE CRISP ©2009

A U S T I N T E X A S
Hornsby Bend
1 9 5 9 2 0 0 9

Hornsby Bend Facility Site Map



Walnut
Creek WTP

FM 969

SH 183

FM 973

AWD Hornsby Bend
Facility

I-130

SH 71

FM 973

South
Austin
Regional
WTP

ABIA



Water - Treatment Ponds 180 acres

- Water moves by gravity
- Pond Ecosystem treats water
- All water recycled – no discharge to the river
- Water used to irrigate hay fields onsite
- Popular birding site in Austin Area since 1959





Hornsby Bend Habitats

- Riparian Wetlands
- Gravel Pits
- Bottomland Brush
- The "Boneyard" Dump
- Grassland and Fencelines
- River
- Ponds
- Bottomland Forest







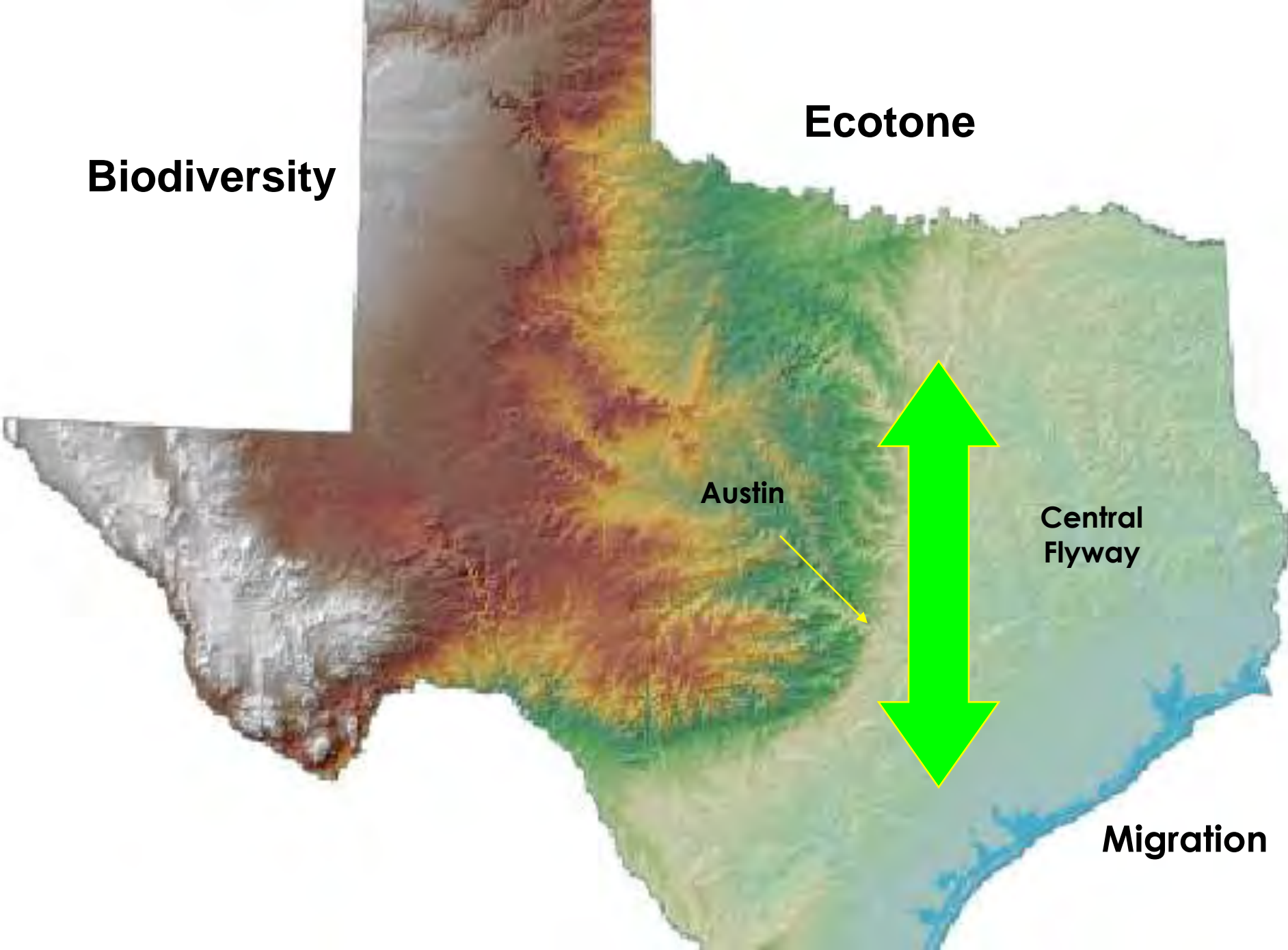
Biodiversity

Ecotone

Austin

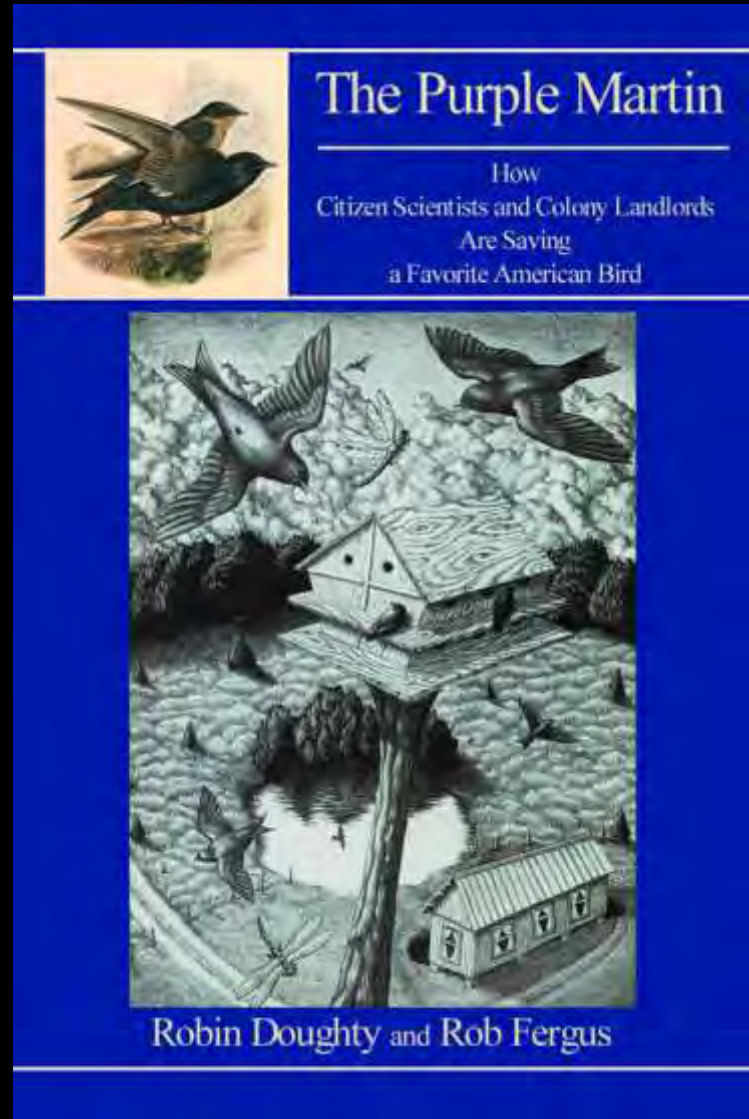
Central
Flyway

Migration



Commensal or Mutual?

Commensalism, in ecology, is a class of relationships between two organisms where one organism benefits from the other without affecting it. This is in contrast with mutualism, in which both organisms benefit from each other.







Purple Martin Parties

July 8/9 & 15/16 & 22/23 & July 29/30 7:45pm – 9:00pm



Austin and Birds

Other Urban Denizens of the Sky



Urban Colonial Nesting Mammals – the Bats

Congress Avenue Bridge - Mexican Free-tailed Bats





WELCOME TO THE WORLD'S LARGEST URBAN BAT COLONY
BAT CONSERVATION INTERNATIONAL
www.batcon.org



Austin American-Statesman
batcon.com
Night Time 512-416-9196 Category 300

1339

Urban Pollinators – the Bugs

Mutualism





Mutualism

<http://urbanpollinators.com/>



GET TO KNOW POLLINATORS

WITHOUT POLLINATORS, THE WORLD WOULD BE LESS DIVERSE AND LESS DELICIOUS!



BUMBLEBEES

The champions of food-crop pollinators! Bumblebees are threatened by habitat loss, pesticides and the spread of bee diseases.



FIREFLIES

Common visitors to sunflowers, fireflies are threatened by light pollution, pesticides, pollutants and loss of habitat.



HAWK MOTHS

Night-time pollinators with a super-long tongue to pollinate papayas, orchids and more. They are threatened by habitat loss, insecticides and possibly light pollution.



MONARCH BUTTERFLIES

Majestic migrants that travel up to 3,000 miles one way. They are threatened by deforestation and the loss of California's native milkweeds.



HUMMINGBIRDS

Important pollinators of some wildflowers, hummingbirds are threatened by loss of habitat and insecticides.

WFM.COM/POLLINATORS



The Aerial City and the Soil

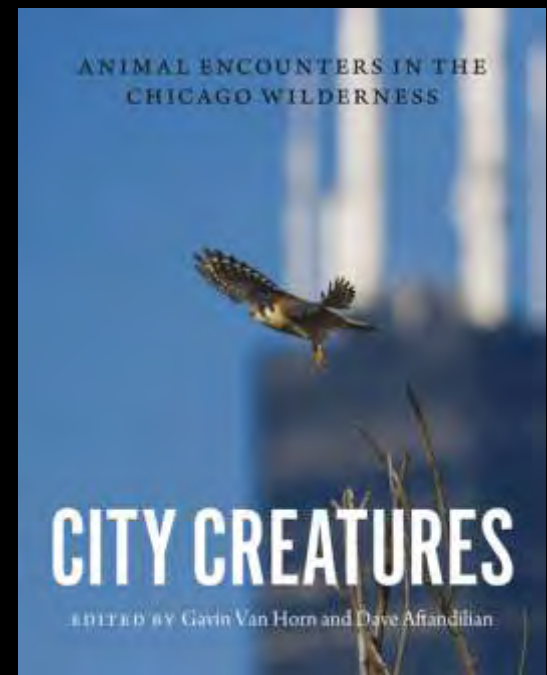
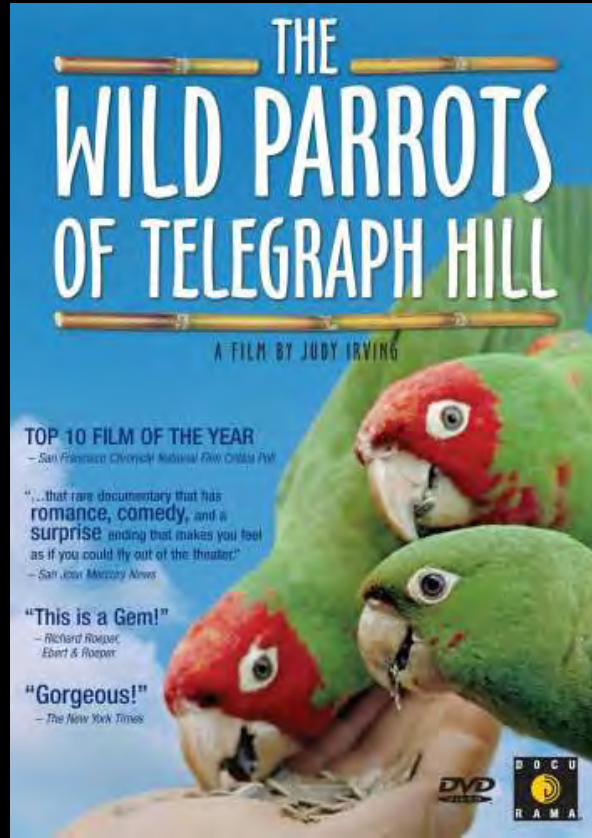
Butterflies on coyote dung – Hornsby Bend



Don't forget the hunters...



Denizens of the Urban Sky - Commensal or Mutual?



Robin Doughty and Rob Fergus