Despite its large size and great strength, the wild black bear is one of the shyest of our wild animals.

RICH MILK OF THE DOE DEER CONTAINS THREE TIMES THE FAT AND PROTEIN CONTENT OF THE MILK OF THE JERSEY COW.

THE PORPOISE CAN STAY UNDER WATER FOR AS LONG AS SIX MINUTES WITHOUT COMING UP FOR AIR.

DECEMBER 1970

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North America's First Christmas
The New Nature of Florida
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Swift Winged — and Colorful
Cross State Barge Canal Report

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The Cover
One of the more sociable members of the watery folk, the Wood Duck (colorful drake below, hen above) is in constant search for "suitable" nesting sites. See page 20.

From a Painting by Wallace Hughes

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Tallahassee, Florida 32304

ROSE - TALLAHASSEE

DECEMBER, 1970
Swarthy Spanish conquistadors listened nervously as their priests intoned the Christmas Mass. Hernando De Soto, were in hostile Indian country, and their prayers were more for survival than for the traditional blessings of Christmas Day.

They had just held the first celebration of Christmas in the New World was not marked with the traditional gifts and feasting. There were no bright lights, no beautiful music; no laughing children. It was simply a religious service dedicated to the remembrance of Christ's birth.

According to historians, De Soto sent a detachment of troops back to Tampa Bay to retrieve the three ships they had left at anchor there. After short explorations from their camp, the leader returned the tiny fleet to Havana for reinforcements and supplies.

But meanwhile, De Soto heard new tales of rich provinces to the north and west. In March, he broke camp to begin the meandering trek that ended in his death near the Mississippi River in 1542.

Actually, no one kept a journal of the perilous expedition, so no tangible proof exists to tell us what happened to these ill-fated explorers. It is definitely known, however, that De Soto and his men spent the fall and winter of 1539-40 at Anhayea, and since 12 priests accompanied the Spaniards, these devout Catholics undoubtedly would have marked the holiest of all days in the church calendar with a Mass.

It is fortunate that Floridians today have not forgotten this historic event, which occurred near their state capital. The State of Florida has acquired this site for development by the Division of Recreation and Parks, Department of Natural Resources, as a memorial to the New World's first Yule observance.

The First Christmas Historic Site is reached by driving north from Tallahassee on U.S. Highway 27, turning right on Crowder Road and on Indian Mound Road. The site covers 11 1/2 acres and includes three of the complex of seven mounds of the original Indian village—one of the largest mound centers in northwest Florida and one with nationwide significance historically and archaeologically.

The Division of Recreation and Parks has built trails and footbridges around the mounds, a picnic area, a nice parking area, restroom facilities, and a ranger's residence. The 1971 Legislature will be asked to appropriate funds for a museum to house artifacts and exhibits concerning the events that occurred at this unique and beautiful site 431 years ago.

By VIRGINIA NEWMAN

The First Christmas Historic Site is reached by turning right on Crowder Road and on Indian Mound Road and a parking area.

Florida's First Christmas observance is reenacted near the actual site, above left, by Tallahasseans. The state historic memorial, above, stands beside U.S. Highway 27 in Lake Jackson vicinity. From Lake Jackson, the visitor is guided to an oral history of the first Christmas in the New World.

Photos by Cane Smith

FLORIDA WILDLIFE

DECEMBER, 1970
Wilson Wins Award

Northeast Region communications officer Lt. P.C. Wilson of Lake City has received a certificate and a cash award of $210 under the State Awards Program for career employees for designing a compact and inexpensive switch panel and radio controls console for use in vehicles equipped with two-way radios. According to the agency awards committee report, the design and suggestion figures to save the Commission approximately $1,000 annually over the old method of mounting the various vehicular switches normally used in law enforcement vehicles. The sturdy, attractive console designed by Wilson accommodates all radio controls, auto light switches, including the revolving light, and also the electronic siren amplifiers now widely used by law enforcement agencies. With special brackets attached to the side of the unit even the nightstick and flashlight can be handily secured.

The new switch console consolidates radio, electronic siren, and special light switches in common use in law enforcement cars—without drilling unsightly holes in the dashboards. It was designed for safety, practicality, plus attractiveness.

Innovation paid off for Lt. P. C. Wilson of Lake City, who designed and built reusable radio and switch console on which the units in this vehicle are installed. He received a cash award from the state for this idea.

Communications Improvement

Wilson Wins Award

When it comes to "water change" planning, research is required and must be followed by careful studies with best results for the future.
I'd try this before knocking it. Main thing is to endeavor to use it with a boat having low freeboard as electric motors aren't much for wind fighting.

Even with their rising popularity locally, it seems the electric motors are more popular in the deep impediments than in Florida, where most of our lakes are shallow. In combination with the electronic fathometer or fish finder, the electric is a sure winner and sneakier than oars.

I have had some interesting discussions with canoe users lately. Some things the experts mention that most greenhorns like myself haven't thought of.

The square sterned canoe (with just a little piece of flat transom for a small outboard) balances better with the motor but places the steering handle in a rather awkward position for many users. The bracket installation tends to tip the canoe but is easier to reach from the seat.

Aluminum canoes are the lightest and generally accepted as the toughest. They are, however, the hardest ones to get over rocks in the shallows. Aluminum sticks to stone where fiber glass or plastic will slide over.

Overall, I'd say the most popular length for fishing canoes is about 16 feet. There are families and a lot of gear without being too spoky. When someone shifts his chaw and is still light enough to fit handily on a car or pickup. The very small canoes are generally used by careful folks who stick to small water, by experts who could handle two or three people comfortably while watching the current go by.

Reading water is a science not only for boatmen but for fishermen, even when the streams or tides are relatively slow.

A Keys guide I used to know once told me he had an unending war with cormorants. It wasn't that the birds ate so many gamefish fingerlings but that they scared fish off the flats by skimming along close to the surface. A 10-pound bonfish will spook from a coral mound as if the bird were capable of scooping him up and carrying him off.

I'll accept the verdict of the biologists that the birds are not to blame for poor fishing—and they may be responsible for good that we don't even know about. Let's leave them alone.

Almost everyone who fishes in moving water knows there's a slow pocket, often an eddy, downstream from an obstruction in a river. This, he knows, is a good place to try at fishing a small canoe above a stump in fast water is actually going slower than the main current. Sometimes a fish will choose that spot. Just below a sand or mud bar there is usually a protected area which has a small current which is easier to reach from the seat. They're easier-nailed by gamefish under such circumstances, caught in a smaller area and somewhat disorganized.

Fluoroscopy is a science not only for boatmen but for fishermen, even when the streams or tides are relatively slow.

I'm not a chemist or I'd be making my living an easier way than this, but there's a new stickum called "Miracle Patch" that seems likely to hold almost anything to almost anything—and do it immediately without a wait for drying.

The stuff comes in a sort of yellowish stick and you heat it with a lighter or other open flame. Then, when you put the melted stuff on one material, and press against it, the stuff doesn't come apart. Bing McClellan of Burke Flexo-Products Company, 1960 South Airport Road, Traverse City, Mich., 49684 showed me how it worked on a couple of canvas strips about 54-inch wide. He heated the goop, stuck the strips together and it was a little smarter晖聪明 than I couldn't pull them apart. They say it'll work on everything from leaky ponchos to punctured canoes. It melts, however, at 59 degrees so I wouldn't patch a skillet with it. Costs $1.50.
The Giant, or Marine, Toad, above left, was brought to Florida from South America to wage war on insect pests; a job it does very well. It is a poisonous animal, however—such glands will exude a toxic fluid if disturbed. The Red-whiskered Bulbul, below, is a fruit-eating bird from Asia. It escaped from a rare bird exhibit and successfully established small wild colony in Miami area.

By GEORGE FICHTER

DECEMBER, 1970

Florida Wildlife

FLORIDA WILDLIFE

Drawing by William Hughes

Our or the numerous distinctions of Florida is the "newness" of its nature. With almost bewildering regularity in this frontier land for plants and animals, a non-native species steps front and center on the subtropical stage. These newcomers sometimes add zest to nature watching, but more often they are cause for alarm, for many of the aliens prove to be ecological misfits that become pests.

To most first-time visitors to Florida, nearly all the plants and animals are strange new sights. The finger-like peninsula points so far southward that most of the native flora and fauna at the state's southern tip are not found on the remainder of the continent. Added to these are the literally thousands of exotic plants brought into Florida over the years to bolster the luster of the landscape.

People who become Florida residents eventually come to know these plants and animals as ordinary, everyday sights, most likely assuming them to be native species. Then the really new ones pop to the fore!

This happened to me one afternoon two years ago as I was driving along a back road in the Florida Keys. I saw what at first appeared to be a rolled-up, charred newspaper blowing across the road. But a side glance as I whisked by revealed the "paper" had wings! It flew to the top of a tall tree at the side of the road.

I stopped immediately, got out of my car, and walked back cautiously to get a better look at this strange bird. Alas, I had no binoculars with me, but still I could see clearly that the bird was almost wholly black and had light or buff patches on its underside. It was extremely slim and had an exceptionally long tail—as long or longer than its body. Most peculiar for a native bird, it walked lengthwise along the branches.

Soon the bird flew off to another tree, then to another, and was lost from view. Fortunately I took the precaution of making notes of exactly what the bird looked like and how it acted, for after studying many bird references that night, I would have been confused by the variety of descriptions I had read. And I might never have had the confidence to conclude that I had seen an African paradise widowbird.

My birdwatcher friends laughed at my report. They tried to convince me I had really seen some common bird under unusual lighting conditions. One suggested it was probably a black bantam rooster that had taken refuge in a treetop to escape a pestering dog or cat. Further, a man who lived nearby had a dozen or more of these little chickens that ran loose in the thickets at the side of the road. Certainly it was a plausible idea, but my notes made it perfectly clear—to me, at least—that the slim-bodied, long-tailed bird was no chicken.

Another friend speculated that I might have seen a gray-colored scissor-tailed flycatcher that looked black only because it was backlit against the sun-brightened sky. I had seen the bird at a variety of heights and angles, however, and was positive it was black. Even though a scissor-tailed flycatcher is a rare sight east of the Mississippi, I was convinced the bird I had seen came a greater distance—from the other side of the Atlantic.

Three days later, a lady who lived a few miles farther north along the same road called a naturalist at Everglades National Park and announced, "For a couple of days now I have had an African paradise widowbird at my feeding station. I took closeup photographs in color because I thought you might like to see them. How do you suppose that bird got here?"

About two weeks later, a man near Palm Beach also saw an African paradise widowbird. The same one? Probably so. None have been reported since, so it seems likely this was a lone bird traveling the coast. Perhaps it had escaped from a wildlife exhibit. If it had just arrived on the continent, it might have come all or part of the way across the Atlantic as a stowaway aboard some ship. Another possibility is that a storm could have helped it hop the broad expanse on its own wings. Other birds have made the trip successfully. One has become established as a breeding bird.

Cattle egrets, also natives of Africa, apparently came to South America unassisted. From there they island-hopped through the Caribbean and arrived in Florida in the early 1950's. Today, these rather short-necked, yellow-billed egrets, with a habit of feeding in pastures more than they do along the waterways, are so much a part of Florida's nature that few people think of them as immigrants.

They follow my tractor when I mow the grass and catch the insects stirred up by the "iron horse" and mower. Unafraid, they come to our doors and windows and peer inside.

Cattle egrets now spread from Florida over all of the South, and have been seen as far north as Minnesota, Michigan, Maine, and even Newfoundland.

The red-whiskered bulbul, another newcomer to Florida, is a bird native to Asia. It got its start in the Miami area when a few birds escaped from a rare bird exhibit. They made themselves at home immediately in the trees and shrubs of suburban areas. Like the introduced English sparrows and starlings, the red-whiskered bulbul avoids the wildness.

These chattering, attractive, black-crested birds, with red ear patches and a splash of matching red under their tails, like people and the food they find around houses. They are not at all shy about taking ample samples of mangoes and other fruits as they ripen. This has not endeared the birds to fruit growers, naturally.

If the bulbul migrates and moves northward as some predict, it poses a threat not only to Florida but to the Georgia and Carolina peach country and to those farther north who grow apples and cherries. At least, in the "off season" it will earn its keep by eating insects.

Other new birds in Florida have taken shorter trips to get here—from Central and South America. The most striking of these is the spotted-breasted oriole, a slightly larger bird than the native North American orioles (which do not range into southern Florida).

The arrival of one of these birds in our avocado grove is always well announced, for its loud, clear calls are distinctive. To date, the spotted-breasted oriole's behavior has been so exemplary that people try to attract it to their homes.

The smooth-billed and groove-billed anis are two other natives of the American tropics that have moved to Florida. Because they are black, these members of the cuckoo family are commonly mistaken for grackles, but they have much longer tails than do grackles (except the boat-tailed grackle) and have distinctively high-arched bills.

Even when they cannot be seen, the anis reveal (Continued on next page)
their presence by their unusual call, a throaty, drawn-out chirp that begins on a low note and slides upward into a high-pitched squeak.

Birds are not the only creatures that wing their way to Florida from foreign lands. Every summer and autumn, black witches flutter through our carports and garages, just as they have done for hundreds of years. Their wing spans are as great as 12 inches from nose to foot, and they can weigh a pound or more. Their presence by their unusual call, a long, drawn-out chirp that begins on a low note and slurs upward into a high-pitched squeak.

Black witches are the largest members of the group of moths that look as though they just emerged from a sooty chimney. Their wing spans are as great as 12 inches from nose to foot, and they are about as big as a human hand. In the fall, they fly south in a steady stream from Canada before winter weather has cut it off. In the spring, they fly north, to the southern United States and Canada, and may end up in Florida. They are one of the most abundant insects in Florida, and they are a major pest to many farmers and gardeners.

The black witch would be a dreaded pest, too, if it became established on this continent. But although it has managed to make its way as far north as Canada before winter weather has cut it off, it has not become a breeder in North America—so far.

Two animal pioneers in Florida that have achieved pest status locally are amphibians. This gives them distinction, albeit negative, among their kin, for almost everywhere the amphibians fit on the fringes of the forest. On wet nights, they climb trees, buildings, and poles. A pinnace of achievement for a frog on a rainy night is climbing to the top of a power pole. On some, you will recall, there are big transformers—cans in appearance—that reduce the voltage from the main line before it enters a house. Where we were living during a Cuban tree frog population peak a few summers ago, the main line carried 7,500 volts and 1,000 amperes. At the fuse wire this high voltage made a slight buzzing noise and glowed faintly where it jumped a slight gap. A frog sitting on top of a transformer was separated from this killing jolt of juice only by one large ceramic insulator. But the buzzing—very insectlike—and the glow would sooner or later draw the frog’s attention. Always ready to eat, the frog would stretch out along the insulator toward the buzz, aim toward the sound, and flick out its sticky tongue. Unfortunately, the frog’s feet were still grounded on the ground of the power pole, so it could not make contact with the power and be electrocuted. Instead, it would jump back on the transformer and be electrocuted again. Sometimes I would hear a lineman muttering to himself, “I wish the frogs would leave.”

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and brought them home as pets. All went well until the snails escaped their cage last summer and began foraging on flowers and shrubs throughout the neighborhood.

Soon there were more snails, for each hermaphroditic adult is capable of producing several hundred eggs at a time—and does so more than once a year.

Fortunately, a woman in the neighborhood complained about the snails eating her flowers. She was amazed at their size, for many had shells four inches long. (The largest on record was twice that size.)

State Department of Agriculture officials got excited about the voracious snails, too, and dispatched crews of biologists immediately to do away with them. They used chemicals to kill the snails and believe they destroyed almost all of them in the first attack. The biologists intend to keep close watch at the site for several years, however, to make sure, for with the great reproductive potential of these creatures, they could become multi-million dollar pests practically overnight if they made their way into the vast agricultural lands surrounding Miami.

Florida is keenly aware of what some newcomers, both plants and animals, can cost if not controlled as soon as discovered. State and federal officials keep a constant vigil at all ports of entry. What worries them is what kinds of pests might find their way in, and like a magician yanking a rabbit out of a hat, pulled forth a 4-foot citrus tree, roots and all. Earlier, a woman who denied carrying contraband plants was relieved of eight mombin, two pounds of tomatoes, six avocados, 35 chayotes, five oranges, eight sweet potatoes, 11 small melons, a pound of paisley, an assortment of hot and sweet peppers, and two pounds of sausage.

In another case, a schoolteacher returning from Brazil carried a bag of coffee berries she intended to show her classes. She was amazed when officials cut open the berries and extracted 58 larvae of the dreaded Medfly (fly!). The berries were huge enough larvae to have started an infestation that is truly astonishing considering the number of citrus trees in Florida.

A few years ago, the inspectors apparently missed an item such as this. The infestation that resulted took 19 months and more than $10 million to eliminate. And all the while the state’s valued citrus industry was in jeopardy.

The inspectors told me that interceptions preventing such infestations are made about every 20 seconds around the clock at the various ports of entry. What worries them is what kinds of pests and diseases are slipping by during the 19 seconds they spend checking the incoming cargo. What they worry about the most are fruits and disease vectors and ships, boats, and planes that get into the country without adequate inspection.

That plant immigration has become major pests is best demonstrated by the well-known story of the purple-flowered haworthia from South America. It was supposedly brought to Florida by way of New Orleans as an ornamental plant, but escaped into the St. Johns River near Jacksonville and now chokes lakes, ponds, canals, and rivers throughout the state. Millions of dollars have been spent in efforts to control this plant in Florida.

Similarly, the Brazilian pepper tree is now out of control in south Florida, where it is planted because of its attractive and fragrant Christmas decorations and also are good food for birds in winter. The fast-growing, shrubby tree forms dense thickets and threatens to become one of the most “weed” plants in south Florida.

Plants spread more slowly than animals, of course, but over the years they can cover vast areas. It was in 1912, for example, that Allen Andrew, who lived on Florida’s lower southwest coast, got seeds of the Australian cajeput tree and planted them in his nursery.

Within a few years, the trees had marched out of confinement and were growing wild over much of the country at the edge of the Everglades. Andrews, who still saw nothing wrong with the tree, continued to collect seeds and give them to people who came to the wilderness country to homestead.

The cajeput, which, at a distance, resemble birches, grew rapidly and added an immediate touch of the exotic to the supermarkets and pineapple lands. When fires swept through, burning the grass and pines like torches, the cajeput survived with little or no damage. Their shaggy white bark, as much as a foot thick on large trees, burned punklike and smuffed out quickly in rains.

In its native land, the cajeput has many uses: the aromatic bark—as an insulator and a stuffing that is a natural vermicide; the oil squeezed from its leaves and twigs—in cough medicines; and the fine-grained, purplewood hardwood that resists fungi and termite—for decking and some kinds of furniture. But in Florida, the cajeput has managed only to become a pest, growing so vigorously it crowds out native trees even through roadsides and edges.

When it is planted near populated areas, the cajeput’s pollen, produced copiously several times a year, fills the air and brings suffering to anyone with a respiratory ailment. Others cannot tolerate the fetid odor of the flowers. For these reasons, many Florida communities now prohibit the planting of cajeput trees. But the trees continue to spread and are forming great thickets over much of the Everglades country near where they were introduced.

What else is new in Florida’s nature? Who knows? There’s always a new act waiting in the wings, it seems. And ecologists, as usual, are holding their breaths.

Florida’s most infamous new resident is the Walking Catfish, right. Thought to have escaped or been dumped by tropical fish dealer or hobbyist, it has been establised in Florida. Most notorious plant pest has long been dismissed as nothing, and new species is blizzed into a blackout. Pins were scarcest toward the beaches because the frogs are not at all comfortable in salt air.

In our section—obviously at the center of the problem area—no space was left for more pins!

“Walking Catfish,” Clarus bethuscus, an import from Asia. It undoubtedly was brought into Florida by tropical fish importers and either escaped holding facilities into public waters or was dumped by an aquarium hobbyist. In any event, it is spreading over south Florida and there seems to be no way of stopping it.

The strange creature, which grows to about a foot in length—and does not attack dogs or other animals, as was first reported in the press, can actually wriggle over land for considerable distances, as was first reported in the press. It is true, as was first reported in the press, that the Walking Catfish can move over land—the nationally publicized attack dogs or other animals, as was first reported in the press.
I'm not the world's greatest fisherman, but I'm not the worst, either. I go home smelling fishy fairly regularly. There's nothing so profound about it. 'Course, I may have an advantage in age and experience, so my angling effectiveness stems from attention to details-details regarding personal traits that pay off, how and where I present lures; my tackle; and adherence to that old adage about having one mouth and two ears—striving to listen twice as much as I talk.

Consider the case of a lure befuddled with weeds. It doesn't take festoons of salad to render a lure ineffective. A simple little strand of weed hanging onto a hook is enough to make a bass let that one slide right on by.

A lure is delicately balanced, except for the plastic worm, of course. Any addition can throw it off balance, nullifying the action the manufacturer took great pains to build in. So you've two strikes against you if you don't keep your lure clean. It will be ignored by any fish with two good eyes who realizes the setup isn't cricket—he'll have the salad, but not with the meat order.

But many anglers couldn't care less, figuring a little strand of filamentous algae or a short ribbon of pond weed can't make any difference. I'll admit it was rough fishing, but a companion (whom I'm sure would rather be nameless) and I were tossing plastic worms into some maidencane along a shoreline of a central Florida lake. As the lures sank, they'd pick up algae, which was hanging onto the maidencane stems. I spent more time cleaning than casting. Yet I came up with one run on one little piece of pond weed, if I had to tie it all up in one bundle, I'd slide right on by. But on one more cast, the "support" got the hook.

I was so proud of that fish, my first big one, a five-pounder, that I convinced my dad in the interests of keeping the car clean, I'd put it outside the car on a stringer as we drove through town.

But that "perseverance" lesson stuck with me. Bringing my experience along those lines up-to-date, I'm trolling just the other day, alone in the boat. Off one little piece of grass, I had a healthy strike but the fish missed the hook; I reeled in, sped around in a big circle, then trolled the same area. Came the same strike. On my fourth troll-by, the bass grabbed the hook solidly, and I was in business. While the bass wasn't of monstrous proportions, it pleased me that my perseverance had paid off.

It can pay off for you, too. For example, recently a friend told me he had missed a big one near a stump in the small lake on which I live. The bass had hit, then dove into the weeds to free itself. I figured the bass would still be around, so the next time out I laid my surface lure alongside the snag. One twitch did the trick. While it was a good three-pounder, either the fish had lost weight or it was another fish—as it didn't weigh out to my friend's estimate of eight pounds.

So keep your ears open and take advantage of what you hear. Patience, in itself a virtue, in fishing is a necessity. Especially with surface lures, popping bugs, and most of all, with plastic worms. While there are always exceptions, a lure moved slowly seems more attractive to fish. With surface lures, it is a good idea to let the rings disappear from your lure's splash before you start a snail's pace retrieve. They used to say to take time to light a cigarette, but this is considered unhealthy nowadays. But there is something about a slow, deliberate twitching of a surface lure that maddens a bass.

It drives me nuts to fish a plastic worm properly. On rare occasions, a fast jerking retrieve will stimulate strikes. But nine out of ten bass (by unofficial count) prefer the morsel worked oh-so-slowly along the bottom, with the reel handles barely turning.

I'm outfished consistently by a biologist who works out of the Florida Game and Fresh Water Fish Commission Laboratory at Eustis, Dennis "Smoky" Holcomb by name. I just can't duplicate Holcomb's creeping retrieve. He uses an ultra-light spinning rig, puts a BB-sized shot about four inches above his weedless-hooked worm, tosses it into a likely spot, then lets it sink to the bottom. Without any variation, he starts that slow (and to me completely exasperating) recovery. It seems to last for hours. By the time he has his lure back in, I've covered the 360 degrees around the boat—at least twice. And sometimes eaten my lunch. His system is maddening.

But when we hang our fish on separate stringers, (Continued on next page)

Ohio bowman Lyle Roberts, above, dispensed with swivel and snap on top-water lures, and instantly took on cooperative bass. While many authors recommend long casts to work bass up on the lakeshore, a BB-sized shot about four inches above his weedless-hooked worms, tosses it into a likely spot, then lets it sink to the bottom. Without any variation, he starts that slow (and to me completely exasperating) recovery. It seems to last for hours. By the time he has his lure back in, I've covered the 360 degrees around the boat—at least twice. And sometimes eaten my lunch. His system is maddening.

But when we hang our fish on separate stringers, (Continued on next page)

By ART HUTT

DECEMBER, 1970
I'm the one who is always embarrassed. I outdid him once, though. It was a poor fishing day, with no strikes at all. To make matters worse, a sudden, short-lived rain shower had just hit us. I made a cast, suddenly deciding to wipe the rain from my glasses, and laid the rod down to do so. When I could see once again, my rod tip was bending, and I was going through the mechanics of hooking a husky bass—the only one for that morning. Which shows a bass sometimes likes a plastic lure even slower than slow. Stopped, in fact.

Still work my lures slower than most anglers and it appalls me to see the rapid retrieve of salt water fishing applied in fresh water. It is rarely successful.

Patience in fishing is definitely a factor which will affect the weight of your stringer.

Fish don't think, of course, but they do show preferences for certain types of surroundings. You will affect the weight of your stringer.

You'd have to know the marsh to appreciate my viewpoint but I figured most of the fish—largemouth bass, chain pickerel, and crappies—would stay on the lake side of the marsh.

Also I reasoned that their interest would be narrowed to a scoured out "feeding trough" directly in line with the culvert where all the goodies would be flushed out.

My hunch was a good one. Retrieving my spinner in the agitated water out from the culvert produced strike after strike, fish after fish. Other fishermen, casting from different angles, were nearly stoked. And to show how "illiterate" anglers can be, when I left I watched for a few minutes—and, to my amazement, nobody moved into my spot.

So be perceptive; "read" the water. It can make a difference.

Of course, it is very basic to keep your tackle in good shape. A lot of heavy fish are lost to lines weakened or frayed by grooved rod tips. Check yours frequently (use a magnifying glass) and replace it when necessary. Re-tie your lure or swivel to keep a fresh stretch of line at your terminal tackle.

If I have any obsessive fishing "hang-up," it is on the subject of keeping hooks sharp. I carry a Carborundum sharpener at all times and frequently amuse my fishing companions by using it a time or two on most outings. A hook dulls easily (some are never sharp to begin with), even on the jaws of a fish, so a touch-up every so often can be a necessity—if you want to better your score.

Have you ever been out with a fishing buddy, a stranger to local waters, and he insists upon fishing with a partner who used a snap-swivel combination on a surface lure. The extra weight doesn't allow the delicately balanced floaters to perform the way it should. You can get by with snap-swivels in just about any other type of fishing, but tie directly to the lure when using surface stuff.

It was partly coincidence, I know, but I was fishing with a partner who used a snap-swivel ahead of his plastic worm. Since my surface lure was drawing more attention, he switched to an identical lure. About 45 minutes, during which I had several more strikes and landed two more bass, he suggested he take off the snap-swivel and tie directly to the lure. He did, and, sure enough, a cooperative bass hit it on his second cast!

As I said, I'm not the world's best fisherman, but I'll bet you can better yourself as an angler, as I have, simply by paying more attention to details—but not to the point of destroying the pure enjoyment of fishing.

I'm proud of a fellow from Ohio I had out the other day. He recognized that Florida-type fishing was a little different and it delighted me when he paused several times to watch me (the expert) manipulate my lure then copy the general idea.

We both caught fish.

I was equally dumbfounded—even temporarily speechless—in talking with a transplanted Minnesotan who swore he had not caught one bass in Florida in seven years of trying! I had no reason to doubt him and went away musing to myself and wondering what lures and techniques he'd been using. (Talk about perseverance!)

Another mistake that will unbalance and destroy a snap-swivel combination on a surface lure. The extra weight doesn't allow the delicately balanced floaters to perform the way it should. You can get by with snap-swivels in just about any other type of fishing, but tie directly to the lure when using surface stuff.

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Despite suggestions regarding the techniques that produce in these waters? It gets downright frustrating. Admittedly, sportfishing is so variable there are no set rules for super yields, but a person should be receptive to advice and tips from companions or a tackle dealer if he wants to keep up with the crowd.

I was proud of a fellow from Ohio I had out the other day. He recognized that Florida-type fishing

(Continued from preceding page)
Swift Winged—and Colorful

Throughout the United States, the wood duck is considered one of the most beautiful members of the waterfowl family. With its elegant plumage and striking colors, the wood duck is a true delight to observers. These birds are known for their vibrant iridescent feathers, which range from iridescent green and blue to deep red and orange. The male wood duck is particularly eye-catching, with its green and blue wings and deep red body. The female wood duck, while not as brilliantly colored, is still quite striking with its brown and white plumage.

Another interesting characteristic of the species is its choice of nesting sites. Wood ducks are known to nest in a variety of locations, from tree cavities to man-made boxes placed in the wild. This adaptability has helped the species to flourish in many areas, despite habitat loss and other threats.

Restoration of the species has involved a program to educate the public about the needs of wood ducks, the preservation of remaining wood habitat, strict enforcement of bag limits and other hunting regulations, and the responsible management of the species through a nationwide program of sportmen and governmental agencies to provide nesting boxes to replace the still-declining numbers of natural nesting hollows. Wood ducks are strictly North American ducks. They do not migrate to South America as do so many of their kindred, nor do they wander to Europe and Asia as some ducks do. This fact alone should cause us to be concerned with promoting wood ducks wherever we can, for while we enjoy the exclusive benefits of their presence, we North Americans also bear sole responsibility for conserving the species.

In the early spring in Florida, even as early as late February in the southern part of the state, pairing and mating begin among the woodies. Typically, the female assumes the lead in seeking out a suitable hole to call home. Her handsome mate dutifully follows her on twisting, turning exploratory flights through the woods and patiently awaits on a nearby limb as she inspects prospective hollows—often an old squirrel den or an owl or woodpecker nest hole. She will consider a cavity carefully and deliberately, fitting her body to the space, turning and poking about, never in a hurry—just like a lady out shopping. She may choose a nesting site directly over water; it may be near water; or it may be up to a half mile from water if nothing closer is available. The entrance may be anywhere from a few feet to 50 or 60 feet above the ground (or water level). The floor of the cavity may be from two to six feet below the entrance hole, which can be as small as four inches in diameter, which is a surprisingly tiny entrance and exit for a 14-pound duck to be using but an excellent safety feature to keep out raccoons.

When a cavity has been claimed, the female wood duck goes about preparing a nest at the bottom. She does not transport any nest-building materials from the outside. She utilizes the natural wood chips or decaying wood fibers already in the hollow, to which she adds a good amount of down from her body. The nest may be anywhere from a few feet to 50 or 60 feet above the ground (or water level). The floor of the cavity may be from two to six feet below the entrance hole, which can be as small as four inches in diameter, which is a surprisingly tiny entrance and exit for a 14-pound duck to be using but an excellent safety feature to keep out raccoons. The female wood duck goes about preparing a nest at the bottom. She does not transport any nest-building materials from the outside. She utilizes the natural wood chips or decaying wood fibers already in the hollow, to which she adds a good amount of down from her body. The nest may be anywhere from a few feet to 50 or 60 feet above the ground (or water level). The floor of the cavity may be from two to six feet below the entrance hole, which can be as small as four inches in diameter, which is a surprisingly tiny entrance and exit for a 14-pound duck to be using but an excellent safety feature to keep out raccoons.

By GENE SMITH
she sees him no more probably. For 28 to 31 days
the nest hole and begins to utter low call notes-to
which the little ones begin cheeping in reply from
its natal hollow, using its needle-sharp claws and
last duckling has climbed the perpendicular wall of
tumbled down to join the rest .

It matters not that a wood duck nest is high over
hard earth, for the fluffy ducklings are apparently
unharmed by a bouncy landing. Successful jumps
following in close order drill.

Once
the
brood is assembled on the surface,
shortly
as soon as the little ones begin
cheeping in reply from
its natal hollow, using its needle-sharp claws and
last duckling has climbed the perpendicular wall of
tumbled down to join the rest .

They are deceptive targets all day long, but not
quite such tough nuts to crack come bedtime. Probably the surest method of hunting wood ducks,
and also the most likely to get a fellow in trouble,
is to find a roosting pond and shoot as the l ong
strings of birds come in for the night. (Oddly,
while woodies perch and nest in trees, they don't
roost there. They spend the night on the water in
the middle of a lake or pond, or in some bread
chow (in a river.).

The great drawback to shooting woodies at
or near a roost is that the species goes to roost very
late. Most of the birds do not arrive until after
legal shooting hours have closed, which is sunset.

Many is the wood duck hunter, young and old,
who has faced the judge because he failed to stop
shooting at the appointed time, and because he
might also have been tempted to take more woodies
than the law allowed—while they were pouring in
so well.

It is well for the waterfowler to remember that
the law is the law; that regardless of the apparent
plentifulness of wood ducks in his area, federal
migratory waterfowl hunting regulations apply to
all states and to all wood ducks, whether native
grown or true winter migrants into an area. Until
the regulations are liberalized to allow Florida
hunters more woodies, if they are, we should by
all means do our part by sticking to the established
eagle limits on the species, which is, after all, still
in rather short supply on the continent. It helps
the species, promotes good sportsmanship, sets
a good example for young waterfowlers, and avoids
the embarrassment of an appearance in federal
court, a fine, and a blot on one's record.

If you want to do something constructive for
the cause of wood duck conservation, construct a
half dozen nesting boxes. The woodies take to them
with great gusto!

Way back in the February 1966 issue, Flori da
WildIife ran a story on nest box building, com-
plete with plans for two types, one wood, the other
aluminum sheet metal. It has been a popular back
issue.

Since that time, Commission wildlife biologists
have designed another box that is very cheap and
successful—a hollowed-out palmetto palm log sec-
tion with a board top and bottom. Here, briefly,
are the basic features of all three wood duck nest-
ning boxes:

The palmetto log model is a 2-foot section with
all the soft inner wood removed. It has a simple
slanted board roof and a flat board bottom. The
entrance hole should be an oval measuring 4 inches
wide and 3 inches high—no larger—and it should
be positioned about 3 inches from the top of the
box. (That hole size is important. It admits a
little hen but keeps out at least some of her ene-
my. Use it for all three boxes.)

The sheet metal model is a box 12 x 12 inches
square. It can have a pyramid-shaped roof or a
simple slanted board top like the log model. The
inside surface of the front board should be scored
or roughened in some way or have a strip of screen
wire or hardware cloth tacked thereon to give the
ducklings a toehold when exiting.

The sheet metal model is a box 12 inches in diameter. It can have a metal conical roof
that slips over the pipe and fastens with a couple of metal screws. The bottom is a wooden dish held
in place by small nails or screws. This box must have the wire or hardware cloth leading up to the
exit hole.

No wood duck nesting box needs a perch or a
porch, for the duck flies directly to the entrance
hole. Each box should be supplied with a 3-inch
layer of wood shavings or sawdust for nesting ma-
terial.

Mounting the finished boxes requires some good
judgment but no real hard work. Choose sites over
water wherever possible. The best method is to
place the box on a sturdy pole or post. The isolation
helps keep out rat snakes, squirrels, and raccoons.

If you don't want to have to drive
metal straps to fasten them around the trunk.
In any case, when mounting the boxes directly over
trunks out in the water. If there's no
serious objections to driving long nails in the tree
that's the quickest way to put a box up. You can
use wire to suspend them, too, or you can use
metal straps to fasten them around the trunk. In
any case, when mounting the boxes directly over
the water they need be only a few feet above the
surface, say head high to a fellow standing in a
boat.

If it is necessary to put the boxes over land,
choose a spot near the edge of the water and use
a ladder to place them from 15 to 20 feet up. A
hanging mount using a heavy wire will help dis-
courage intruders, but tree trunk mounts are less
difficult to accomplish and work quite well.

Spotting is of some importance. Nesting
boxes should be from 30 to 20 yards apart, or no more
than about four to the acre.

A final thought: Boxes should be cleaned out and
repaired (if needed) before January each year.
The house-hunting woodies will be shopping shortly
thereafter, remember.
The Cross Florida Barge Canal was authorized by the U.S. Congress in 1942 at the request of the State of Florida. In 1968, the U.S. Fish and Wildlife Coordination Act was passed requiring the U.S. Fish & Wildlife Service and the state game and fish agencies to provide comments and recommendations on water resource projects to the constructing agency. Such recommendations are not binding but may be included in the project if the constructing agency considers them feasible.

The Cross Florida Barge Canal Project, designed before the passage of the Coordination Act, "locked into" the project many elements critical to environmental quality, precluding essential ecological considerations: the canal's utilization of the organically rich Oklawaha River Valley; the fact that the upper chain of Oaklawa lakes are themselves heavily overenriched; that the flow of Silver Springs provides a constant supply of nitrates and phosphates; and that the water level fluctuation in and the rate of flow through the Rodman and Eureka pools are too slight to be significantly aid in reducing or moving the organic load. Jointly, these and other factors indicate a rapid degradation of the Rodman and Eureka pools and of the organisms the natural river supported.

There are management techniques which could be used to prolong the usefulness of these pools for recreational benefits, but many of these tools are costly and do not appear compatible with the project's primary purpose of navigation. This report focuses on ecological principles which have become better understood since 1962, and which indicate the numerous ecological problems which will arise as a result of the canal. In order to describe the effects of the project on fish and wildlife, it is necessary to concentrate on their habitat, for if the habitat essential to a particular species is maintained, the species will normally be present.

The natural Oklawaha River originates in Lake County at the northernmost end of Lake Griffin. It meanders some 78 miles before emptying into the St. Johns River at a point several miles south of Palatka. Its two primary sources of water are, first, the flow from the upper chain of lakes (Apopka, Dora, Bueclaire, Harris, Eustis, and Griffin, whose waters are extremely rich in organic and dissolved nutrients, as is well indicated by their eutrophic conditions), and, second, the flow from Silver Springs, which is cool and rich but provides a constant, substantial source of basic nutrients as follows:

- Water analysis of the Silver Springs, whose waters have been an essential ingredient in the development of the Oklawaha ecosystem, which supports an abundance of plant and animal species. This rich system maintained favorable conditions for the following reasons:
  1. The natural river has a rapid flow-through system in which water entering at Moss Bluff traverses the entire length of the river in 3.6 days at a steady elevation decline of 8.7 feet per mile. This rapid flow "scoured" the sandy bottom, preventing the build-up of bottom sediments.
  2. Shading of the water by the swamp forest prevented its direct exposure to sunlight so as to produce water temperatures seldom exceeding 85°F.
  3. During periods of flooding, when water covered the flood plain, the adjacent hydric and mesophytic forest acted as nature's "sewage treatment" (Continued on next page)
the natural system. These changes will involve:

1. Creation of two reservoirs, averaging 6 feet in depth, on a highly fertile flood plain.
2. Reservoirs will be cleared approximately 50% prior to flooding, exposing most of the water to direct sunlight. From sources remaining on the banks:
3. Reservoir detention will extend the flow-through time to approximately 56 days in Eureka and 19 days in Rodman. These shallow, warm, nutrient-rich, slow-moving, warm water reservoirs, exposed to direct sunlight, will provide ideal conditions for the nutrients to express themselves in aquatic plant growths.

Sources believe that Rodman and Eureka reservoirs will not eutrophicate as rapidly as has been predicted and refer to the inflow Reservoir on the Withlacoochee River as an example. It should be pointed out, however, that the Inglis Reservoir, constructed in 1934, is about one-tenth the size of the Oklawaha River reservoirs. The average surface water entering the Inglis system is much greater and not as rich in available nutrients as is the case in the Oklawaha system. The key is that the detention time in Inglis Reservoir is only 5.1 days, which greatly reduces the time in which the nutrients present can express themselves in plant growth.

Sources and nutrients are as follows:

<table>
<thead>
<tr>
<th>Source</th>
<th>Nutrient Input/yr.</th>
<th>Nutrient Load</th>
<th>Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainbow Springs</td>
<td>998</td>
<td>183,811.0</td>
<td>27,490.5</td>
</tr>
<tr>
<td>Withlacoochee River</td>
<td>3,338</td>
<td>440,000.0</td>
<td>65,000.5</td>
</tr>
<tr>
<td>Total B/l/year</td>
<td>1,388,871</td>
<td>80,717</td>
<td></td>
</tr>
</tbody>
</table>

The Inglis Pool is indeed a nutrient trap and has serious aquatic weed problems. Approximately one-half of the pool is engulfed with the submerged aquatic plant, hydrilla. This is the plant which most aquatic weed specialists believe will be the most difficult to control and which, therefore, has the greatest potential to become a pest in the fresh waters of Florida. From fragments it grows as much as several inches to a foot a day, but most importantly, it grows from bulblike tubers which are highly resistant to chemicals and can even survive many months on dry land.

Weed control is an expensive operation. In the Inglis Pool, plans are being prepared by the Corps of Engineers to control hydrilla in a 200-acre test plot. The cost of the chemical alone is $20,000.

The Inglis Pool will also be significantly affected by the Cross Florida Barge Canal because of extensive dredging and spoil operations. Utilization of nutrients in a reservoir will generally follow two paths. First, the nutrients will stimulate both submerged and floating plant growth, such as elodea and water hyacinth, which, if uncontrollable, could ultimately choke the waterway.

Second, the nutrients will be utilized in the production of algae. Both developments may occur simultaneously in the Barge Canal reservoirs. This was demonstrated in the Rodman Pool during the summer of 1969, when a relatively insignificant hyacinth population expanded to approximately 2,326 acres for the next 27 years.

The conversion of nutrients into vegetation creates some very serious problems. Too much vegetation is considered a hindrance to navigation and must be controlled. The existing method of chemical control results in ever-increasing quantities of treated vegetation being deposited on the floor of the reservoir, obliterating productive bottom areas.

In simplest form, these newly-created reservoirs are nutrient traps. Available nutrients enter the slow-moving, warm water system and are utilized in some type of plant production, which dies or is killed and settles to the bottom.

This principle of encouraging nutrient uptake by plants is used by sanitary engineers in sewage treatment plant design and for additional nutrient removal in the tertiary treatment of polishing ponds. The major difference, however, is that the accumulated sediments can be routinely removed from the polishing pond, but they become a permanent part of the reservoir. These slowly decaying materials become the controlling factor in the aquatic environment. The bottom, reducing invertebrate populations, producing lower dissolved oxygen levels, and reducing spawning areas for fish. Probably the best means of predicting developments in the proposed reservoirs is by comparison with known occurrences in comparable situations.

We believe that the 20 years of fishery information the Game and Fresh Water Fish Commission recently compiled on the St. Johns River is relevant, especially because of the similarity in the relationship of water flow and nutrient load between that river and the proposed Oklawaha River-reservoir complex.

Even though the St. Johns River retains a popular sport fishery, changes have taken place in the past 20 years which foretell serious problems arising. During this period, the important game and food fish species declined in weight as follows: large-mouth bass—46%, black crappie—46%, bluegill—68%, shellcracker—42%, redbreast sunfish—88%, channel catfish—48%, and white catfish—21%.

These drastic shifts in fish populations and exhibit excellent harvest success for the first few years. This is followed by declining fishing success as fish populations stabilize.

For example, the Dead Lakes in Calhoun County were impounded in 1957 and declined after 1965. Both Deep Lake and Long Lake in Santa Fe County are impounded in 1961 and declined after 1972.

The fish population in the Rodman and Eureka Reservoirs is expected to peak earlier and harvest success to stabilize at a lower level than those reservoirs mentioned above—due to the exceptionally heavy nutrient load, which will prove excessive aquatic vegetation and algal growths.

The death of these plants, by natural or chemical methods, will produce the sediment build-ups which will ultimately render the bottom unproductive for most sport fishes. (Lake Apopka in Orange County is an excellent example.) The shallowness of the Cross Florida Barge Canal reservoirs will further hasten and magnify many of these problems.

Excesses of the barge channel through the upper end of the reservoirs are so severe that the meandering Oklawaha River being bisected into a series of artificial oxbows. The water will follow the wider and deeper manmade channel. The oxbows will become choked with aquatic vegetation, resulting in excessive sediment build-up and undesirable aquatic conditions.

The problems of aquatic weed control and associated expenses in canals were described by the late Dr. Lyle Weeks, aquatic weed specialist with the U.S. Department of Agriculture, when he wrote: "The Central and Southern Florida Flood Control District and Dade Metropolitan Water Control have..." (Continued on next page)
both found that a large canal 80 to 100 feet in width and 8 to 10 feet in depth will cost from $2,000 to $4,000 per mile per year for weed control maintenance. Since the volume of water in the Cross Florida Barge Canal is 3 or 4 times that in size, I do not believe it unreasonable to postulate that the cost of weed control could reach $10,000 to $12,000 per mile.

The aquatic environments of the Rodman, Eureka and Inglis reservoirs and the St. Johns River area, or will be, suffering from degradation due to the eutrophication processes, but this will take the back seat for a period of time when the channel is being dug through the pools.

According to the Corps of Engineers, the dredging contract in the Rodman Pool will be for 12 months, Eureka Pool, 12 months, Inglis Pool will have 12 months stumping and grubbing and 12 months of dredging, and the St. Johns River contract will be for 20 months.

The turbidity will be high in the reservoirs during the dredging operations, and their effects on the aquatic environment will be severe. The silt, clay and organic material will be placed in suspension and will blanket the reservoir bottom. This process will recycle nutrients trapped in the bottom mud and will probably cause a sag in the dissolved oxygen. The turbidity created in the Rodman Reservoir will also affect the degradation portions of the 14-mile section of the Oklawaha River from Rodman to the St. Johns River.

Where the Barge Canal alignment follows the St. Johns River the proposed channel enlargement would necessitate dredging. Shallow littoral areas in this section of the river have rooted aquatic plants growing on gravel bottoms. Such areas are important as fish spawning and feeding areas, and for production of the organisms upon which they feed. The turbidity and fallout of sediments will greatly reduce the production of life in these areas. Where the channel crosses the shallow areas, such areas will be removed as productive portions of the aquatic community.

Not to be overlooked is the pollution and associated hazards of commercial boat traffic. The presence of accidental spills of pollutants, or the willful pumping of bilge into the waters of the Cross Florida Barge Canal, will always remain a threat to the aquatic environment and to recreational use of the area.

To obtain some idea of the frequency of such spills in Florida, we contacted the U. S. Coast Guard headquarters in Washington and were given the reply that, "The frequency of oil spills in Florida can be assumed to occur three or four times a week." A similar information provided by the Coast Guard and the Federal Water Pollution Control Administration, Atlanta, Georgia, the following table was prepared:

<table>
<thead>
<tr>
<th>Year</th>
<th>Spills</th>
<th>Average Frequency</th>
<th>Types of Material Spilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>17</td>
<td>1 per 21 days</td>
<td>Bunker C oil, diesel</td>
</tr>
<tr>
<td>1966</td>
<td>10</td>
<td>1 per 56 days</td>
<td>Bunker C oil, white gas, diesel fuel</td>
</tr>
<tr>
<td>1967</td>
<td>12</td>
<td>1 per 50 days</td>
<td>Bunker C oil, #2 diesel fuel, asphalt, asphalte</td>
</tr>
<tr>
<td>1968</td>
<td>10</td>
<td>1 per 19 days</td>
<td>Bunker C oil, #2 diesel fuel, asphalt, asphalte</td>
</tr>
<tr>
<td>1969</td>
<td>25</td>
<td>1 per 15 days</td>
<td>Bunker C oil, diesel, gasoline, bilge, back</td>
</tr>
<tr>
<td>1970</td>
<td>7</td>
<td>1 per 3 months</td>
<td>Bunker C oil</td>
</tr>
</tbody>
</table>

OiI spills cannot be predicted. On the other hand, the unwritten laws of nature are deliberate and irreversible. Eutrophication is one of these unwritten laws, and it applies to every body of water on earth. But it occurs at varying rates of speed. Water resource projects generally accelerate this process through stabilization of the water levels, which normally fluctuate widely, and through channelization of rivers and streams, which are excellent conveyors of watershed nutrients to the receiving waters.

Eutrophication is also accelerated by the length of the growing season. Consequently, the climate of Florida is almost ideal for maximum speed of the process. The Rodman and Eureka reservoirs are expected to eutrophicate at a rapid rate, and the effect will be the loss of many projected recreational benefits long before the 50-year project life is complete.

In conclusion, it is the opinion of the Game and Fresh Water Fish Commission, based on the information now available, and in consideration of the principles of ecology, that the previously assumed benefits from fishing and hunting will not be realized throughout the project life of the Cross Florida Barge Canal.

Hunting

reported frequency material spilled

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I kept a record of expended ammunition out to 62,000 rounds. At that stage I sent the rifle back to the Winchester factory for a new barrel and cinematic style, the action turned out to be just as fine as before.

Eventually, I let the Model 62 go into the second-hand trade, solely because I liked the new Winchester Model 61 slide-action better. I still do, but now wish that I had kept my Model 62. It was a reliable little rifle.

Now, the Winchester Model 61 has also been discontinued. I don't have strong feelings about it. Fortunately, however, I did not make the mistake of disposing of my hard-worked Model 61. I had it overhauled, like new, and kept it.

I even though I don't need a Rossi, I am glad to see the replicas of the Winchester Model 62 become available.

The little rifle is sure to be a good seller—not only because it so closely copies the famous Winchester Model 62, but also because the vast distribution network behind it is in the gunsmithing trade.

Like the old Winchester 62, the new Rossi is primarily a plinking rifle—great for shooting tin cans and other improvised targets but no great shakes as a tight grouper of shots on standard 50 yard paper targets.

The Rossi catalog features a short, lively 16 long or 14 long rifle cartridges, separately grouped and occasionally mixed. Chamber feeding is fast and, in the short, snappy action that made the Winchester Model 62 so popular, it's sure to become popular again.

The Rossi 62 was of take-down type. So is the Rossi. Loosening a single coin-screwed bolt permits the separation of the rifle into two major components for easy packing and transportation. This feature also facilitates cleaning, which was a frequently necessary chore in the days when 22 ammunition was unlike the more recent loading.

The Rossi is a nice looking rifle. The walnut used in the stock and fore-end appears to be good grade, and the trigger and hammer are apparently hard-chromed to give striking contrast to the deep blue finish of the receiver, barrel and tubular magazine.

There are many professional gunsmiths, but relatively few goods ones—fewer, still, who also have the talent to make the rifle. The missing link seems to be the effect of disposing of one's own hard-worked Model 61. I had it overhauled, like new, and kept it.

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There are many professional gunsmiths, but relatively few goods ones—fewer, still, who also have the writing ability. Conversely, there are few writers who are also expert gunsmiths.

In their day, treasured texts by gunsmiths Clyde Baker, Roy E. Dunlap, James V. Howe, and Harold MacFarland served both professional gunsmiths and a writer of ability. The more I read, the more I like the book and admire Bish's lucid writing style.

Subject matter is certainly varied. No matter what type of firearm you shoot, you will find one or more related texts in the book.

There are a number of articles devoted to re-modeling different lever actions, modified actions, special models and types of actions, from homely military rifle models to the latest magnum sporting rifles.

Common gunsmithing jobs like correct installation of a rubber recoil pad, glass bedding of rifle actions, broken stock repairs and stock refinishing, pistol-grip cap making, accurizing handgrips, sight installations, simple (but professional appearing) gold and nickel plating, small soldering jobs, how to make emergency field repairs, and many other items are covered, in detail.

In the back of the book is a list of sources of supply for gunsmithing tools and accessories, plus a compilation of gun shops alphabetically listed by states and cities. These lists are excellent consultative references, simply because they are so complete and easy to use. Readers are much to benefit from owning and reading the Home Gunsmithing Digest by Tommy L. Bish. The volume has already found a spot in the "Not To Be Loaned Out" section of my library.
The book emphasizes the value of coastal areas—tidal rivers, salt marshes, estuaries, and the shallow sea off the coast—as habitats for marine life and as recreational areas. It provides questions that should be posed regarding coastal development, such as the impact of mining and drilling, tidelands, real estate development, beach erosion, pollution, and water pollution from domestic or industrial sources. It also asks questions about the rights to land being developed below high water line. (b) dredging permit or approval of state? Corps of Engineers? (c) Does permit include conditions to prevent silting? Does the municipality have a wetlands ordinance? (d) Are other categories of modifications planned for coastal areas? The book is edited by D. W. Bennett, conservation director of the Littoral Society. "The questions emphasize the need to look into all aspects of proposed changes to the shallow, productive edges of the sea," Bennett said. "It is up to those who propose or support change to prove that their work will not have an adverse effect on the coastal marine environment. He said that barring proof, applications for approval to work should be denied. "Unfortunately," Bennett said, "in all too many cases quite the opposite happens—plans are given cursory examination and approval belatedly, in some cases well after the impending change to the coastal marine environment has occurred."

Now scientific headquartes are being reduced due to experiments conducted at the National Marine Fisheries Service. Fishing and Gear Research Base in Passaquoi, Miss. Base personnel have hooked the echo sounder to a computer with enthusiastic results.

Returning signals from the echo sounder are digested by the computer which then determines the density of a school well before its position. The instant data recorded on a teletype can be connected by radio with land-based teletypes for immediate relay to commercial fishermen.

But most important, as the acoustical system becomes more fully developed, is the precise information it will provide to marine resource management scientists.

Outstanding Research Award

The Gold Medal Award of the International Oceanographic Foundation for contributions to oceanography was presented to Mr. J. Seward Johnson, New York, New Jersey, to Dr. F. G. Walton Smith, President of the Foundation. The presentation was made on November 20 at the Sonesta Beach Hotel, Key Biscayne, Florida, at the Foundation's Board of Directors and Gold Medal dinner, in recognition of Mr. Johnson's contributions to advancing knowledge of the sea through his research in diving equipment and research submarine construction and for his support of oceanographic research and education.

Director of the well-known fishery research, Johnson and Johnson has long been an ardently supported of research, education, and conservation in the oceans. A deep-water sailor of noteworthy ability, Johnson has frequently made the annual P.E.A.R.L. available for research projects, and has taken an active part in them. He became interested with submarines, and has gone on to devote diving equipment and to develop a new concept of research submarine construction.

As a participant in a shark study in 1968 he made many SCUBA dives to the study of their behavior. He has given advice and counsel on the design of small oceanographic research vessels, and assisted in the conversion of the outfitting of R/V GOSNOLD.

Long a proponent of the separability of marine science education from marine research, Johnson was one of the first to urge upon the Woods Hole Oceanographic Institution the establishment of a degree-granting educational program to complement its extensive independent investigations, and then generously endorsed the program.

His conservation interests led him into concern for the survival of the Atlantic salmon. With his support, the Matamek Research Station was established on the lower reaches of the St. Lawrence, and a continuing program of research on this species was established through a cooperative program.

Marine conservation interests led him into concern for the survival of the Atlantic salmon. With his support, the Matamek Research Station was established on the lower reaches of the St. Lawrence, and a continuing program of research on this species was established through a cooperative program. Mr. Johnson has been a Trustee of the American Littoral Society for ten years, and is also a Trustee of the National Wildlife Federation. Yet according to the National Wildlife Federation, Mr. Johnson was one of the first to devise diving equipment and to develop a new concept of research submarine construction.

A NEW 21-page pamphlet, "In investigating Fish Mortalities," has been published by the Federal Water Quality Administration. It is intended to assist professional field investigators in on-site assessments of fish mortalities, environmentally concerned non-professionals will find the booklet to be informative and useful.

Nature Notes

Though its purpose is to assist professional field investigators in on-site assessments of fish mortalities, environmentally concerned non-professionals will find the booklet to be informative and useful.

The resulting photo was fuzzy and indistinct. Not only does the whale save Abner, he brings him his hat and his harpoon. Then the huge whale comes crying and complaining to the fisherman. Abner sticks his head into the whale's mouth, sees a fish spine, and removes it. Abner gives the whale the more makereel to make him feel better. Prudence, the jag, objects, and with that Hugo takes a mouthful of whale bones, comes up, and douses Prudence. The show ends with a great jubilant leap by the whale. And . . . Water Development?

The Japanese newspaper Ma-nichi Shimbun discovered that polluted river water can be used to develop fish populations, according to the National Wildlife Federation.

The paper's September 4 issue printed a photograph developed not with photo chemicals but with water collected from rivers, ditches, and canals near Mt. Fuji. The resulting photo was fuzzy but recognizable.
The court or court business went up sharply for seven men arrested in late October in Indian River County, according to Maj. Brunetl Goodson, Chief of the Law Enforcement Division, Tallahassee. They were arrested by wildlife officers and charged with taking a deer at night with gun and light. Seized as evidence were a 9-point buck, two swamp buggies, and a quantity of guns and ammunition.

Goodson credited these and similar game law arrests in the state to the increased number of officers recently employed and trained and to zoning, which permits more flexibility in assigning officers to patrol areas and at times of greatest need.

The Indian River arrests were made after a Commission aircraft spotted lights moving in the St. Johns River marsh south of Vero Beach. Officer DeWitt Staats of Vero Beach, Sgt. Jim Cook of West Palm Beach, and Lt. Elliott Lott of Okeechobee, alerted by radio, entered the area on foot and walked several miles to the hunting party.

Upon reaching the scene, the officers identified themselves and called for the group to halt. Two men on a halftrack vehicle attempted to flee, apparently trying to run down two officers in the process. They were apprehended after their vehicle was disabled.

The other five men hid in the area and eluded the officers, who pretended to leave with their two prisoners. When the five returned to their "abandoned" hunting camp, they were greeted by the waiting officers.

Several of the men had previous records for similar activities. The arresting officers speculated that the men were possibly market hunters. A hunting pole with several meat hooks was found in their camp, along with other indications of previous illegal hunting activity.

Besides the deer carcass and the two motor vehicles, 10 assorted shotguns and rifles, several handgun, nine portable lights, and a quantity of ammunition were seized. Under the law, all the equipment may be confiscated by the State upon conviction of the alleged game law violators.

In a similar air-ground night patrol operation a week later in Collier County, four more night hunters were arrested and charged with taking a deer at night with gun and light and resisting arrest with violence. One of the party was a woman.

According to Sgt. Dale Edwards of Bonita Springs, the hunt was directed to the area by Commission Pilot Terry Gough of Greenscrees City, who spotted the fires from the air. The officers left their vehicle and walked about a mile to a point at which they could intercept the slow-moving vehicle of the suspected game law violators.

As the jeep approached, Sgt. Edwards stepped into the road and identified himself, calling for the driver to halt. Instead, he accelerated. Edwards sidestepped and leaped onto the vehicle in an attempt to grab the ignition keys.

At this point one of the jeep's occupants reportedly struck Sgt. Edwards about the head several times with a hand light, almost knocking him unconscious and causing him to fall from the moving vehicle. His leg was run over by a rear tire.

Officers Jackson and Suggs succeeded in forcing the driver to stop, and Edwards placed them under arrest.

Evidence seized in the case was a deer carcass, a jeep, a hand spotlight, a headlight, and two fully loaded guns.

Captain Gwynn Kelly, chief regional law enforcement officer, noted that seven motor vehicles are now in bonded storage in the Everglades Region, all taken in game law case—ample evidence that such illegal activity can make for mighty expensive meat!

MADISON COUNTY Wildlife Officer Vanness Seckinger, 65, of Route 1, Ocala, retired September 30 after 20 years of continuous service to the Game and Fresh Water Fish Commission and to the people of central Florida.

Seckinger was born in Ocala and has always made it his home.

He was first employed part-time during the hunting seasons, beginning in November 1920, but became a wildlife officer in September 1944.

Vanness and his wife, the former Harriet Lora Brooks, have two grown children, a son and a daughter, and a 15 month old grandson.

In a brief ceremony during the regular monthly business meeting of the Game & Fish Commission at Tampa in October, the retiring officer was recognized by the director, Dr. O. R. Frye, Jr., and commended for his many years of faithful service to the commission and the state.

Commission Chairman William M. Blake expressed appreciation on behalf of the Commission for Vanness's dedication to good conservation through fair and impartial enforcement of the wildlife laws of Florida. The chairman then presented to him an engraved gold badge and a framed certificate of commendation as memorials of his association with the GFC.

His many friends and fellow officers wish for Vanness a long, happy retirement.
American Bittern

Photo by Leonard Los Rue III

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