Dedicated to the
Conservation, Restoration, and Protection of our Game and Fish

BILL HANSEN, Editor

VOLUME 18 NO. 12
MAY, 1965

In This Issue
Fishing Signs, Symbols and Systems
Charles Waterman 12
The Green Heron, and Relatives
Wallace Hughes 16
The Florida Wild Turkey
James Powell 18

Departments
Conservation Scene 4
Fishing 6
Muscle Flashes 8
Boating 10
Dogs—Hunting 28

Florida Wildlife is published monthly by the Florida Game and Fresh Water Fish Commission, Tallahassee, Florida.

Copyright 1965 by Florida Game and Fresh Water Fish Commission.
Mammals, too, can blow the whistle on pre-natal development. Minks, weasels and certain others will mate at various times of the year, yet the young are born during a given period in the spring when the weather is warm and food is more readily available. In these instances fertilization occurs with mating, but development is suspended, then resumed at a time to give birth during a favorable season. Bears make easy work of having young. It occurs during the “twilight sleep” of hibernation. Then a quarter-ton sow gives birth to two or three half-pound embryonic morsels. They fend for themselves and are reasonably self sufficient by the time mama bear sits to wakefulness a month or more later.

Porcupines would appear to have a sticky time of it, particularly with a breech presentation. But nature has developed a way. Parent porcupines come packed in puncture-proof bags which the mother tears open on delivery. Exposed to the air, the soft, moist spines harden in a matter of minutes. Then the animated pin cushions are prepared to face the world with confidence. Armadillos are unique in their reproductive ways. They always have four young; they are always of the same sex (either all males or females), and they are always identical quadruplets. It can’t be otherwise because the single fertilized egg divides into four, each having identical germ plasm. If there’s an advantage to the process, it’s not apparent. But it is different.

Unusual—and significant—is the way many kinds of wildlife regulate their production of young to fit conditions in the environment. Given plenty of food and cover, cottontails, for example, will have more and larger litters than they will under adverse circumstances. In fact, with food and shelter in plenty, a sparse population will even include some breeding by young-of-the-year, something which never happens where the animals are over populated. Increased production and a determination to swell numbers to fit the capacity of land to support them has been noted in deer, muskrats and others as well.

Bears make easy work of having young. It occurs during the “twilight sleep” of hibernation. Then a quarter-ton sow gives birth to two or three half-pound embryonic morsels. They fend for themselves and are reasonably self sufficient by the time mama bear sits to wakefulness a month or more later. Bears make easy work of having young. It occurs during the “twilight sleep” of hibernation. Then a quarter-ton sow gives birth to two or three half-pound embryonic morsels. They fend for themselves and are reasonably self sufficient by the time mama bear sits to wakefulness a month or more later.

As the population of Florida continues to grow, we must manage the lands and waters of the state to produce more wildlife and fish, more recreation areas for camping, boating, swimming and other outdoor activities. We must be progressive in our attitude toward conservation and forego antiquated methods of management and harvest if our conservation program is to keep pace with the growth and development of our state.

The program of progress in Florida will be one of wise utilization of existing resources and not exploitation of our state’s wealth. The program of progress will consider not only the tangible results but the intangible benefits as well.

As Governor of Florida, I expect the agencies concerned with natural resource conservation to provide the people of this state with a sound progressive resource-use program. I ask the forces of progress to cooperate with the causes of conservation and I urge the people of Florida to aid and assist both the cause of conservation and the march of progress.
Fishing with a cane pole can require skill and restraint, mainly the latter.

By CHARLES WATERMAN

Some good fishermen leave expensive equipment at home to fish with cane poles. Sometimes a pole is simply a new tool for the job.

Most of us started with cane poles and maybe we never figured there was much skill involved. A cane pole expert probably wouldn't attract much attention at a casting exhibition but sometimes he uses a lot of finesse.

The real strong point of the cane pole is its use with baits that won't stand rough treatment. In other words, the crustiest of equipment can make the most delicate presentation. Any bait fisherman who has tried to cast small minnows with spinning gear or deliver lures with a fly rod is already with me.

Using the longest pole you can strap to the car with a jug-sized bobber and huge sinker is something else. That's amateur stuff.

Poles more than 10 or 12 feet long are likely to get pretty unmanageable. The best pole operators I've seen used pretty light ones and they generally use a line just a bit shorter than the pole, tossing the bait with a smooth, underhand swing. Almost all cane-pole operators use monofilament nowadays. A lot of them use one hand to operate the pole, taking hold a couple of feet from the butt and using the forearm as a support for the pole.

Most of the poles you buy are imported from Japan although the same kind of bamboo is grown in small quantity in this country. The best grade of cane pole is treated, usually with a lime oil. Sometimes it is shellacked or varnished. Treatment generally improves the action and the carefully finished pole is a selected "blank" to begin with.

No reason why a guy who shops carefully for more expensive equipment shouldn't be equally careful in selection of a pole. Tackle dealers expect you to notice most of them simply turn the custom-made, usually with a line nurse. Sometimes a good pole operator will spend half an hour pawing through the entire stock before he comes up with just what he wants.

Generally he hunts for good balance with an even bend near the tip. A stiff butt section and a rather soft business end are generally the objectives. For such a stick, well finished, the angler will probably pay about 75 cents.

One of the best methods of fishing for crappie (speckled perch) and other panfish with a cane pole isn't stillfishing by any means. It's generally done with a boat, one guy using the pole and another pushing on the oars or paddle. They move slowly along the hyacinth banks, bonnet beds or shoreline obstructions and the fisherman drops baits gently into the best spots.

It's primarily after panfish although small bass are frequent victims. Another gimmick might be called slow trolling. A pole or poles can be fastened rigidly and the boatman moves very slowly, leaving the baits in the water. That's no good if there are a lot of obstructions but it is very easy on the bait in fairly open areas.

Real trolling with poles can be seen anywhere salt water trolling, with the boatman standing on or sitting on the deck, especially on shallow flats. The commercial angler runs a small, inboard motor that enables him to troll slowly and inexpensively. He uses small jigs, minature spoons, shrimp or combinations of these and when he hooks a trout he simply swings it aboard and is back in business before you can count his lines.

That's not the only place artificial baits are used with poles. A rubber spider works fine on panfish and you can do very well with small plugs and spinners. Casting weight is no problem.

There are some methods of canepole fishing in which the lure is fastened up very short—six inches to four feet from the tip. The ancient sport of "doodle-socking" or "jigger-bobbing" is simply use of a sturdy pole, a very short piece of stout line and a big lure. As the boat moves long the lure is kept underhand. If he's not too large you can let him swing back to you with the longer line generally approximately the length of the pole.

Anyway, "cracker poles" are not necessarily for people who can't afford reels or for beginners who don't know any better.

More than 2000 people were presented at a fishing clinic in Fort Myers the other day. It was the second year that I've helped out with the project, which is sponsored by the local newspaper, the Fort Myers News Press.

It is an afternoon and evening program, the afternoon given over to demonstrations of fishing techniques and the evening presenting a panel discussion headed by experienced fishermen and guides.

No one is going to become a fishing expert in one day but there's a need for some sort of steering program, especially for Florida.

This thing is a trend. At a Mackle housing development called Deltona they are conducting an honest-to-goodness course in fishing with a paid instructor. This is the second class (we had something about the original one in this column) and many graduates of the first course are back again plus a few new ones.

The other evening I was invited to talk about fishing at a dinner sponsored by a number of businessmen for new Florida arrivals. I won't say that my address filled them with inspiration but I think the thing was a success. The other speaker was a Game & Fresh Water Fish Commission supervisor. This was a fine avenue and almost all of those present being retired individuals who had been outdoorsmen in their home areas before coming to Florida.

Florida is a little hard to get your fishing started in for a pretty obvious reason. There are so many new people arriving every day that a fishing resident of long standing is understandably cautious about handing out fishing invitations. In parts of other states I've fished there may be a local expert just pining for a fishing buddy and you're in business immediately.

This isn't a matter of unfriendly fishermen. It's simply an oversupply of new ones moving in. There's still water and fish enough for all but I'll admit I'm not so generous myself as I once was.

Fact is, I've been saddled with quite a number of guys who weren't even fishermen at home but thought they should clean up now that they had reached the Land of Plenty.

Let me advise a newcomer to Florida to seek every scrap of fishing information he can. If a course is available, take it. For the fish is there and they are practically begging.

These things won't catch fish for you but they will start you in the right direction.

Where fly lines are concerned, "float" is a badly abused word. Only with a fly line that picks off the water (which you do a good job of casting true sinking lines require a different technique entirely).

When we used silk lines, making them float was only a trick. Line dressing or "grease" was a necessity.

Comes now the fine, durable lines some of which require no dressing to "float." If you're not experienced, proceed with caution.
To be a successful shotgunner your weapon must fit you like a suit of clothes. Correct length of stock drop at comb and heel, and barrel pitch are main things.

The shooter who uses the binocular (both eyes open) method of aiming, usually needs a higher shooting shotgun than the shooter who keeps only one eye open and, therefore, is more gun conscious.

The wide top of the butt-stock is called the "heel." The more pointed bottom section of the butt-stock is known as the "toe." Average length of butt-stock from heel to toe is about 5½ inches. Thickness of stock wood at butt-end should not be less than 1½ inches.

"Drop at heel" is the distance down to the heel of the butt-stock from the back-projected horizontal plane (line) of the sighting rib. The closer it is to true horizontal, the less recoil will be felt. Excessive drop at comb and heel slows down the shooter's gun handling and increases felt recoil.

"Pitch" refers to the angle at which the butt-stock fits to the shooter's shoulder and the incline that angle gives to the gun's muzzle.

Down-pitch of 1½ inches is about right for most bird hunters. The trapshotter, needing a high-shooting gun, may have a bit less barrel drop-down, none at all, or in rare instances even a slight barrel up-pitch.

To measure pitch, stand the shotgun in a vertical position alongside a wall, with butt of gun flat on floor. Push gun back slowly until top of receiver just touches the vertical surface of the wall. With a ruler, measure how much the barrel inclines away from the wall, taking measurement from the wall to the center of the bore.

Experiment with stock pitch and barrel pitch changed by slightly loosening the butt-plate screws and alternately trying a flat cardboard shim under the butt-plate and heel too.

(Continued on page 32)

Muzzle Flashes

There are many related facets and technicalities to consider for a good gun fit

By EDMUND MCLAURIN

Every time I stress the importance of good gun fit to successful shotgunning—as I periodically do—the mail brings letters from readers wanting to know how to recognize or obtain it in a shotgun.

The subject is one that simply cannot be given justice in a letter; it has too many related facets and involves too many technicalities.

Good shotgun fit begins with an understanding of the nomenclature of major component gunstock dimensions and how they affect shooting performance. Correct length of the stock, drop at comb and at heel, length of toe and barrel pitch can be considered the main factors in good gun fit. Others include gun weight, balancing point, barrel length and shape of grip at small of stock and at fore-end.

The average factory shotgun stock measures about 14 inches in length of pull, has 1½ to 1¾ inches of drop at comb, 2¼ to 2½ inches drop at heel, and a barrel pitch-down of 1½ to 2 inches. These standard dimensions may or may not be correct for your physique, or specific need. They may even vary slightly among different makes.

Length of pull is the measurement of the gun-stock from center of the trigger's curve to the center of the butt-plate.

Jack O'Connor, a contemporary gun editor my senior in both years and knowledge, thirty years ago told me that "length of pull is right when the stock is short enough so that it mounts quickly and easily without catching on clothes at the shoulder, and it is long enough when it keeps the thumb of the right hand from bumping the muzzle when the gun is fired."

The old practice of determining correct stock length by placing the butt-stock in the crook of elbow and noting where trigger finger makes natural feeling contact is no longer considered accurate.

Other methods are now recommended.

One of the Winchester technicians suggests mounting a yardstick to shoulder just as you would mount a shotgun. (For easier reading of measurement it is best to have the one-inch end of the yardstick at shoulder.)

Lay your cheek against the shouldered yardstick, as if it were a shotgun, and then grip the yardstick with your right hand (left if you are left-handed) as though you were holding a gun. Remember to raise your right elbow (the left one if you are left-handed) so that it is level with your shoulder.

Now slide your right hand (left if it is being used) back along the yardstick until your nose barely touches midway between the second and third joints of your thumb, or about four inches from the thumb's end. Crook your index finger around the yardstick as though you were comfortably on the trigger of a gun. The reading on the yardstick at the spot where your trigger finger bends around it is about your correct stock length measurement for field shooting, measured from the center of the butt-plate to the center curve of the trigger.

Be sure to wear your shooting clothes, or clothing of similar thickness when taking the measurement, and take the same measurement several times for verified accuracy.

A stock that is obviously too long for the individual can easily be shortened.

To correct too short a stock simply install a Pachmayr neoprene rubber recoil pad of needed thickness to extend stock length.

If the too-short stock already has an installed recoil pad, addition of plastic "spacers" between the recoil pad and wood end of the butt-stock will add length as well as beauty. Seldom can matching wood be found for the purpose.

The exception occurs when a shotgun stock is shortened to fit a youngster. Then, the cut off piece of walnut can be saved and put back on the gun with a thin plastic spacer when he or she reaches maturity.

The comb of a gunstock is the contoured top section against which the shooter places his face in order to bring his aiming eye and gun into proper alignment.

Its job is to put your aiming eye in exact line with the center of the rib or barrel and slightly above it. To do this, it must be high or low enough to accurately position your face each time you under your gun and take aim. The line of vision should never be so low that you see the breech staring you in the eye.

Normal comb height on standard shotguns is 1¼ inches below the aiming rib. This is better known as "drop at comb."

As little as 1¼ inches drop at comb indicates a decidedly straight stock that is apt to make the gun shoot quite high because it raises your line of aim. If as much as 1½ inches, the other extreme may be reached. It is surprising how much a difference of only ¼ of an inch in comb height can mean in face fit and targets hit.

Drop at comb should be about 1½ to 1¾ inches for best results in upland hunting.

The comb itself should be substantially thick and well rounded on top—not thin and sharp-edged. Too thin a comb can introduce cross-firing error, by permitting the aiming eye to wander too far off center line of aim.

A Monte Carlo style stock is to be preferred because comb height is the same at both ends, in relation to the rib of the barrel. There is no sloping of the comb portion toward the heel of the stock.

Near the heel, the top of the stock takes a cut-away design, but not on the working comb portion.

You can measure comb height of your present shotgun by placing a straight edge along the sighting rib and letting it extend back over the comb. Measure the distance down from the straight edge to top point of comb where your cheek normally rests, to get the drop at comb figure.

To find whether or not present comb measurement is correct face fit, slip into your hunting coat, take your unloaded gun and assume shooting stance in front of a large mirror. Should the gun as you would do afraid, but with both eyes closed. The last is important. . . . Now, without moving either the gun or your head in the highest, open your eyes and the mirror reflects the pupil of your aiming eye looking into itself, exactly across center of breech and slightly above it. If so, comb height is about right.

Another method is to lay a 25 cent coin on the shotgun's rib, about 20 inches back from muzzle. If you have correct comb drop you should be able to sight over the coin and just see the top of the barrel or rib at marked point where the base of the sight (the mirror) touches the barrel or rib. A comb height that meets this test will give the shooter a sighting plane that will take care of most rising targets.

To shotguns like to see plenty of daylight under winging targets, and thereby require a shotgun that centers its main shot pattern about eight to twelve inches above point of aim, after 40 yards of flight. A low-shooting shotgun is good for rabbit hunting and for Skeet competition, but little else.
Florida Boating Council outlines special legislative requirements with efforts to up-date laws for the future

By ELGIN WHITE

Maytime is supposed to be the time for romance, but for avid boating enthusiasts, it really signals the start of the summer season and this year looks as if it is going to be the best yet on Florida waters.

The recent Miami boat show is a good barometer. Your reporter was there, and if that show gets any bigger, they’re going to have to hire another hall instead of the Dinner Key Marinas, because boats and people were all over one another. We saw some magnificent new craft there, and strangely enough, some of the more attractive looking outboards were priced a bit lower than last year.

There were some Italian models on show at the Miami bingos that were really attracting some drooling boatmen. These Donni’s were a cross between a racing hull and a family cruiser. Had seats all the way around the gunwales from just aft of the steering wheel on the port side, all the way to the starboard side. Pretty mony but unless you’re in the market for a water scooter in the $7,000 class, forget it.

Special information of vital interest to all Florida boaters has been given me by Harold Parr of the Florida Boating Council and the Florida Board of Conservation. In essence, here is its presentation.

"With the Legislature now in session, special efforts are being made to have consideration given to revisions of Florida Statutes 371 to eliminate ambiguous, apparent conflicts, to strengthen the safety requirements in several areas, and to bring the state law in line with Federal regulations.

"The 1963 Legislature enacted two pieces of boating legislation, one dealing with safety and the second completely revising the registration law. A number of sections of the original 1959 legislation, which for the sake of clarity should have been repealed, were left standing. As a result, there were numerous ambiguities and several apparent conflicts in Chapter 371 as it now appears in the Florida statutes.

"In proposing to revise the entire Act in the interest of clarity and public understanding, the Boating Council recommends several amendments to improve safety provisions and make administration and enforcement more effective.

"At each of the public hearings conducted by the Chairman, the consensus is that Florida should require that every boat propelled in whole or in part by machinery be registered and display an identifying number.

"However, since extension of the registration certificate tax to boats propelled by machinery of ten horsepower or less, in effect, would be a new tax imposed on many of our citizens, the Boating Council feels it is outside their area of jurisdiction and makes no recommendations. (Under present law only pleasure boats with over 10 h.p. are registered.)

"The Boating Council recommends the exemption from personal property taxes granted motorboats by the 1963 registration certificate tax legislation be amended to exclude pleasure yachts holding marine documents issued by the U. S. Bureau of Customs.

"Documented vessels are exempt under Federal law from registration by the state.

"The effect of existing Florida law is to levy a tax upon the small family boat propelled by an outboard motor of more than ten horsepower, while freeing from any state or local tax whatsoever the luxury pleasure yachts of a displacement of five net tons or more which hold valid marine documents.

"The Council recommends that only those vessels registered under the provisions of Chapters 371, 370 and 372 of the Florida Statutes be defined as motor vehicles and that those vessels holding marine documents issued by the U. S. Bureau of Customs be excluded specifically from the exemption from personal property taxes, except those documented vessels the owners of which have paid a boating registration certificate tax for the current tax year. No number would be issued documented vessels.

"The Council points out that a new tax was substituted for personal property taxes on boats, but the documented vessel is subject to neither, excluding the counties from revenue formerly available.

"To strengthen water safety and better administration of Chapter 371, the Council recommends:

"Authority for the Chairman, with Council approval, to designate an advisory committee to be composed of five representatives of the public, one from each Congressional District as they existed in 1941. Members of the advisory committee would be paid per diem and mileage as provided by law when attending Council meetings at the invitation of the Chairman.

"Authority for the Board of Conservation to make rules and regulations governing enforcement of safety provisions of Chapter 371.

"A statement of Legislative intent that boating registration funds transferred to the Land Acquisition Fund of the Outdoor Recreation Program be spent insofar as practicable for the benefit of the boating public.

"Authorize the Director of Conservation, with approval of the Board, to establish restricted water use areas when investigation determines there exists a safety hazard of interference with navigation.

"A requirement that water skiers wear a lifesaving device. Professional performers would be exempt from this requirement.

"An amendment changing the date of eligibility of a boat being registered for the first time for the fractional (one-half the annual) fee from January 1 to January 30, and providing that a new owner after December 31 would not be deemed subject to registration prior to the time registration application was made.

"The period for re-registration be set from June 1 to June 30 and a declaration that it is unlawful to operate a boat without a current registration certificate after June 30. This would bring state law into conformity with Federal regulations.

"Note - Recommended action has been approved in principle by the Safety Committee of the Legislative Council and the whole Council."

Comment . . . these appear to be significant suggestions for Legislative consideration. With the amazing increase in boating in Florida, it is apparent to me that we are going to have to keep up with the tide or get drowned. With the new waterway routes now under construction and being proposed for the next decade, we will have almost as many boats on our Florida waterways by 1970 as we had automobiles in 1960. Sounds far fetched, but have you considered that even when the magnificent new Dadie County and Miami interchange expressway system was opened to automobile traffic last year it WAS OUT OF DATE AND OB-

(Continued on page 33)
Most anglers have their own thoughts and schemes to back up their reasons for when fishing is best.

**Fishing Signs, Symbols and Systems**

By CHARLES WATERMAN

Albert Guenther plays a jumping lobsmouth bass that struck right after a rain on a central Florida lake. The netting job by Howard Gold. looks clumsy but they're trying to keep the fish out of the submerged vegetation.

I believe in all of the signs that have to do with fishing. I never laugh at fishing signs. If a man believes in a rising barometer or a blue necktie, I'll go along.

Any time a fish is caught or gets away there are undoubtedly a lot of signs that bear on the event. Because he hangs suspended in a delicate state of fluctuation, things that wouldn't faze a routine hack with several feet on the ground will really bug a fish.

And despite our attribution of all sorts of personality traits and intellectual achievements to various fish, the truth is that a fish is a simple soul, incapable of calculus, craft, or conniving. But it is more fun to feel that your quarry is outwitting you than just temporarily dormant on the bottom. Wherever we talk of fishing signs, the immediate question is, "What about the tide tables? Do they really work?"

The answer is that they do work but you'd better take something besides tide tables with you when you go fishing. So let's take up the matter of the tide tables first. The rule is to try to fish when they say you should but try to remember that there are a few thousand other variables.

Here's an extreme case.

Suppose we're fishing for black bass at the head of a tidal river. We're far enough upstream that the water's fresh but it's still affected by tidal movements.

We look at our tide table and find that, at noon, the pull of the heavenly bodies would provide a major feeding period (or "best" fishing time). So here we are on the scene. It's noon and the book says now's the major feeding period for the day. However, it happens we're on the Gulf side of Florida and, according to our tidal charts, high tide on that particular coast doesn't occur until 1 p.m., and the natives say high tide is the best fishing time at that spot. So the high tide doesn't go by the book.

However, there are some islands at the mouth of our river and tide moves in slowly and comes up the river before it gets to us—so it's two o'clock before we have our high tide.

But today there's a strong east wind that holds the water out for another hour; so it will be three o'clock before high water gets to us. We wait for three o'clock but a thunderstorm comes along and only a fool would sit out there in an open boat. We crawl up on the bank and watch it rain. The tide table didn't work, so well but it's not the fault of the guy who compiled it. We haven't disproved anything.

Now should we have gone by the tide as scheduled by the tide table, the tide as scheduled by the coastal charts or the real tide? The answer is that compilers of tide tables feel atmospheric conditions are important in fish behavior and the conditions that exist at the time they schedule "major feeding periods" are probably best for fishing. These optimum conditions can be changed by many things as we've already seen and the condition of the actual tide in our river may have offset the atmospheric factor. It's further complicated by the fact we don't know what this factor is. We've simply hooked good fishing to a given condition.

Confused? So are the fish. I'm convinced the tide tables are worthwhile but I wouldn't rely on them entirely.

Weather changes have effect on fishing of course but the change that turns them on today may turn them off next week—a happy imponderable that makes fishing fun. I think it's a good idea to fish during change of any kind.

Florida fish are used to warm weather. A cold snap changes their habits—fast.

Now with the barometer falling and a cold front moving in, I've known fish to go on a feeding spree. My theory is that they feel a cold wave coming on and feed up in preparation for a semi-dormant period.

(Continued on next page)
As the surface warmed toward 75 degrees, the bass heads that way. The fishing thermometer tells you to "fish deep" or "fish shallow," according to temperature. It isn't that simple.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing to go down deep.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.

I've caught fish when it thunders but, generally, electrical storms bring poor fishing. I once happened to be looking at the calm surface of a shallow lake just as a clap of thunder (first of a series) occurred. The lake erupted in hundreds of swirls and splashes. We didn't catch much after that. They seem to gorge himself the way he would if preparing for a fast. Makes sense.
FLORIDA, A LAND with many waters, is home to great numbers of birds that live in and are dependent on water for their livelihood. Some are swimmers, some are divers. There are shoreline runners or walkers, and some, like the Green Heron and its relatives, are waders.

Members of the heron family are long-legged, long-necked, and long-billed. They wade shallow waters and expertly “fish” for tadpoles, frogs, fish, crawdads and other aquatic creatures.

The Green Heron is one of the smaller members of the family. Hunched up, neck folded close to its body, and crest pressed down flat, it is about the size of a crow. With neck outstretched, crest raised and tail twitching (see front cover) it appears to double in size.

Other herons are usually found together in small or large groups, but the Green Heron leads a solitary life preferring shadows and hidden places rather than open waters. Four of the 12 Florida relatives of the Green Heron (opposite page) more or less inhabit open places where, because of their color and size, are easily seen. The three foot high Common Egret and smaller Snowy Egret, resplendent in snow white feathers and lacy plumes, are the showiest of the family.

The gray feathered Great Blue Heron stands out because of its large size—four foot tall and six foot wingspread. The Louisiana Heron is best identified by its contrasting dark body and white belly feathers.
Research Programs
For Better Hunting

THE FLORIDA WILD TURKEY

By JAMES A. POWELL
Assistant Chief, Game Management

Photo by Loyd Williams

There are more wild turkeys harvested in Florida than in any other state in the country. With an ever-expanding turkey population now approaching 80,000 birds, Florida hunters successfully harvest over 25,000 each year. The discussion of the Florida wild turkey that follows is based on a fifteen-year study and centered around the annual wild turkey relocation program that has successfully restocked many areas in the State. The study encompassed such factors as life history, band return, movement and longevity, and was also the basis for many turkey regulation recommendations such as either harvesting in the fall, state-wide spring gobbler sessions and present bag limits. The Game and Fresh Water Fish Commission is deeply indebted to Lykes Bros., Inc., for the use of their lands in Glades County, Florida, not only for providing the area with which to do the research work herein presented, but also for the continuous source of supply of the wild-trapped turkeys relocated throughout the State. This 250,000 acre refuge and management area supports one of the best, if not the best, turkey population for its size in the world.

A number of factors contribute to the successful management of the wild turkey in Florida. Not the least of which is the available habitat so necessary for the maintenance of the population and its expansion potential. Florida has approximately 21 million acres of forested lands in a total land and water expansion of over 25,000 miles. The State can be divided into five natural topographic regions (Figure 1): coastal plains, central highlands, Tallahassee hills, Marrianna lowlands and western highlands. Fenner (1938) describes the Coastal Plains as sloping gently seaward in a series of terraces which extend inland along the streams. Soils are marine in origin and are variable in character due to different geological strata. This region possesses the bulk of the turkey population herein discussed.

The Central Highlands in peninsular Florida stretches south, southeastward gradually narrowing as it follows the general trend of the peninsula for approximately 250 miles to northern Glades County. The northern part of this region is a nearly level Plain, southward the land is more hilly and in the general region from Alachua to Pasco County there are broad flat areas interspersed between low, rolling hills. The large amount of turkey habitat available on the peninsula is due generally to the interspersion of various vegetative types throughout the area.

Climatic Factors

The climate of Florida is characterized by mild temperatures and marked seasonal and annual variations in rainfall. Point rainfall averages for the period 1931-55 ranged from 45 to 66 inches annually. Yearly point rainfall totals along the lower east coast have exceeded 100 inches and have been less than 30 inches in some years. In northwest Florida annual point totals have ranged from less than 40 inches to almost 100 inches.

On the peninsula, one-half of the total annual rainfall usually occurs from June through September. This rainy season usually has a rather abrupt start and finish with average precipitation for June about double that for May, while September has twice as much as October. Northwest Florida also gets most of its rainfall during the summer, with a secondary peak in late winter and the driest period in mid-fall. Extreme variations in total rainfall may occur in consecutive years, with large amounts of rainfall occurring during short periods of time. Most areas have experienced three inches in two hours and as much as nineteen inches in a twenty-four hour period. Tropical storms occasionally cause heavy rainfall over large areas. Summer showers frequently last only an hour or two so that during the wet season the duration of rainfall is about six to seven per cent of the time. During the remainder of the year, rain occurs on an average of one or two days per week.

Both summer and winter temperatures are generally mild because no point in the state is farther than about 60 miles from the sea. Maximum daily temperatures range from 60°F to 90°F at most locations.

Florida receives about two-thirds of the possible sunshine. Cloudiness tends to be greater in summer than in winter, and fog is common only along the Gulf Coast, in winter.

Highest summer temperatures in Florida average between 80°F and 90°F. High winter temperatures in southern peninsular Florida average between 60°F and 70°F; in north Florida the average is between 50°F and 60°F.

Snow cover is unimportant as a limiting factor to the turkey population in any of the areas included in this discussion. In the area concerned, humidity probably never becomes low enough to affect hatchability.

Several years of rain gauge data in southern Florida, in conjunction with the turkey population in each area, suggest that rainfall during April, May and June is the most important climatic limiting factor to the turkey population, if not the primary limiting factor. Seldom is lack of rainfall a limiting factor. Too much rain during the nesting and brooding seasons causes loss of nests by flooding and loss of poults by drowning. The extent of these losses is not known. During periods of high water in winter and spring, considerable acreage of range is temporarily inundated resulting in loss of food; however, few turkeys are thought to be lost during these periods. When the water remains high until late in the spring, nesting success generally shows a decline for the river bottom lands.

An excellent example of the importance of spring rainfall on a turkey population and the relative unimportance of harvest is found in what was formerly the Collier Wildlife Management Area in Collier County, Florida. During the 1955-56 hunting season, 502 turkeys were checked out of the area by hunters. Southern Florida experienced unusually heavy rains during the spring of 1954, particularly during the hatching season. With hunting pressure approximately the same, the harvest for the 1954-55 season dropped to 179 turkeys. Following this highly unsuccessful season, there was a great cry to close the area to turkey hunting the following fall in order to allow the population to build up, the game wardens for low game populations. However, starting in January, 1955, southern Florida started into what eventually amounted to a two year drought. Hatching conditions in the spring of 1955 were ideal and tabulated kill for the 1955-56 hunting season was 459 turkeys, with hunting pressure still basically the same. The spring of 1956 was dry and ideal hatching conditions again prevailed. At least 518 turkeys were harvested during the 1956-57 hunting season. The dry period ended near the end of 1956 and heavy rains were experienced during the spring...
As the precipitation increased through 1959, the harvest decreased. The hunting pressure trend followed that of the harvest by usually a year later. While the harvest in 1955 was considerably higher than in 1954, the hunting pressure actually decreased. As the hunters received word of the successful 1955 season, pressure increased in 1956 as did the harvest. Even though the harvest decreased in 1956, the pressure continued to rise and it was not until 1959 that the harvest decrease was reflected in the decreased hunting pressure. Other climatic factors do not appear to have any significant relationship to the turkey populations.

Vegetation and Food Cover

The forests of the Coastal Plain are composed of various southern pines (Pinus spp.), and hardwoods with the pine group accounting for the largest percent of the forest. Oaks (Quercus spp.) represent the largest percentage of the bottomland hardwoods along with red gum (Liquidambar styraciflua). According to Henderson (1939), there are 15 generalized vegetation types in Florida. Harlow (1959) combined these into seven types for deer habitat, which also are important turkey types with the exception of Fresh Water Marshes. Florida vegetation, to a large extent, follows lines of soil classification and geological formation. Although one or two types may predominate in an area, others are usually present. The degree of interspersion of the types of vegetation is dependent mainly on changes of soil, elevation and associated soil characteristics. A difference in elevation of a few inches often results in a marked change in plant life.

Several associations of plants sometimes occur within the same generalized vegetation type. For example, flatwoods of northwest Florida, although easily recognizable as flatwoods communities, have plants which are not found in the flatwoods of central and south Florida. Nell (1957) describes the distribution pattern of plants and animals in Florida and the ways in which these patterns may have occurred. Detailed reports of plant communities of the various regions of Florida may be found in studies by Harper (1941), Laessle (1942, 1943), Kurs (1942), Davis (1943), and Hubbell, Laessle and Dieckmann (1956). Harlow describes flatwood habitat characteristically flat, usually with a rather open overstory of either Pinus caribaea, P. elliottii, or P. palustris, depending on its location.

Some of the highest lands in Florida (up to 300 feet elevation) are found in the pine-oak uplands. The topography is rolling and mature pine stands are open and park-like. The swamps in central and south Florida are primarily soft wood, Taxodium spp., while in north Florida they are generally hardwood, Cfronia-Quercus. The swamps of south Florida are more extensive than those of central Florida and contain semi-tropical shrubs and trees. Laessle (1942) defines hammocks as “woods dominated by evergreen hardwood trees occurring on a variety of soils ranging from well drained to nearly saturated but never flooded.” It is the excellent interspersion of these types that make up the best habitat for turkey throughout most of the State.

Since it is more than 600 miles from northwest Florida to the southernmost range of the Florida turkey, it becomes obvious that the food habits will vary considerably within the State. Acorns make up the majority of the diet throughout the State, but the species of Quercus change from north to south.

As in the case of the eastern wild turkey, the Florida wild turkey will eat almost anything. Relatively few items consistently make up the majority of wild turkey foods and many other items not generally important have been tabulated. Results from analysis of 586 usable crops collected throughout the State during the seven year period from 1952 to 1959 comprise Table 1. Since all crops were collected during November, December, and January, the tables indicate only the fall and winter foods of the Florida turkey. Most crops were collected at hunter checking stations operated on the State managed hunts. Consequently, since much of the turkey harvest is taken near dawn, in or around the roosts, several hundred empty and therefore unusable crops were collected.

Table 2 presents the weight classes by sex and age of 2,912 Florida wild turkeys, taken over a five-year period. The table presents only November, December, and January weights. While the four adult gobblers in the 24 and 25 pound weight classes were actually bagged and checked out of a checking station, it is the author's personal opinion that there might have been a domestic gobbler “in the wood-pile.” The heaviest Florida wild turkey gobbler weighed by the author tipped the scales at 22 1/2 pounds in DeSoto County, Florida in 1955.

Food is probably not a limiting factor on the species in this region. The Florida turkey does not have to contend with critical periods in regard to food.
(Continued from preceding page)

its feeding habits such as the deep snows encountered in states further north. While crop analysis immediately shows the dominance of acorn mast to all other foods taken, this does not mean that Florida turkey range is limited to the areas abundant in oak trees. Good turkey populations occur in the southwest portion of the state where pine, if any oak trees are present. Therefore, while acorns are preferred when present, it is known that the turkeys do not starve during years of complete acorn failure, which happens periodically on much of the range. This is in agreement with Bailey (1951).

Much of the Florida turkey range occurs in areas grazed by free-ranging cattle. Attempts over the past ten years to get the cattlemen to do their spring burning after January 1 and before the middle of March have been successful to a great extent; therefore, following the spring burn in January and February and the subsequent growth of succulent vegetation, Florida turkeys tend to frequent these burns, passing up corn feeders and baited traps to do so.

Figure 3 presents turkey-minutes of artificial feeder use per man-hour of observation. These data were collected over a one-year period by months in Collier County, Florida. Extensive studies in Florida have been carried on over the past ten years relative to the installation, operation and utilization of artificial turkey feeders. One of the earlier fears was that the turkey population in a feeder area might become dependent and over-reliant on the food. This fear was soon dispelled when it became evident that the wild turkey only used the feeders as a supplement during the winter months or in certain periods such as nesting. This author does agree with Bailey that the wide diversification of food ingested by the wild turkey can under most conditions preclude the use of artificial feeders. They can be of value in marginal and sub-marginal habitats. In addition, and possibly of greater importance than any corn that a turkey might receive from a feeder, is the fact of life that a turkey feeder, sitting in the middle of the woods, with "State Game Commission" stenciled on it can be of tremendous public relations value.

Population of Turkeys

Two subspecies of the wild turkey are represented in this discussion. The southern boundary of M. g. sylvestris, the eastern wild turkey, is taken from Aldrich and Duval (1955). South of this line M. g. sylvestris appears to intergrade with M. g. osceola, the Florida wild turkey. This zone of intergradation appears to extend well into the panhandle Florida from the Big Bend area on the west coast to a point around Daytona Beach on the east coast. The southern boundary of the intergrading zone differs with Aldrich and Duval. It was established by the author after examination of a few hundred specimens during the past ten years, based on primary wing feather barring. The range of M. g. osceola extends southward through peninsular Florida.

Newman and Griffis (1950) estimated the Florida wild turkey population at 26,000 in 1948. In 1961 the population of wild turkeys in Florida was estimated at 75,000. These figures were derived from game biologists estimating the populations in their respective counties. This increase is due primarily to the exodus of human predators accustomed to living off wildlife as they did in pioneer days, and the subsequent purchase of the land by large cattle and timber interests. Other important factors include better protection against late summer shooting, fencing of large areas by private concerns, artificial and natural improvement of turkey habitats, and the use of wild-trapped native turkeys for re stocking depleted areas. There are some excellent examples in the State that portray this increase.

In 1950, Newman and Griffis (1950) reported that the four county block of Manatee, Sarasota, DeSoto and Hardee counties in west south central Florida was practically void of substantial turkey populations. Immediately following this census, 270 wild-trapped turkeys were released throughout the four county block and the area was closed to hunting for five years.

There followed a period of excellent public support and a minimum of turkey poaching. In 1955, these four counties were opened to a limited harvest with excellent results and they have remained open each season thereafter. In addition, Pinellas County, on the west side of the State, was reported in 1950 to be completely void of any wild turkeys. In 1960, ten years after restocking, a trapping program in Pinellas County removed 75 to 100 turkeys each year for relocation throughout the state. In 1964, the pre-hunting season population was estimated to be 80,000 turkeys in Florida.

Methods of arriving at wild turkey population figures are somewhat nebulous to say the least, particularly in an area not well known to the individual making the population estimate. Concrete census methods for estimating turkey populations have long been needed for turkey management. During the past ten years, the Florida Game Division has been fortunate in obtaining a good amount of sex and age ratio data. These data come from three sources; sight records by personnel involved in studies, harvest records from managed hunts, and trapping records.

Considerable data regarding sex, age and movement have been obtained from the Florida turkey relocation program. The data in Table 3 indicates that the sex ratio of the Florida wild turkey remains fairly consistent at approximately 40 gobblers to 60 hens. This ratio remains intact whether the population is at a peak year or an ebb year and appears to be consistent regardless of age. An explanation may be required to fully understand the age ratio data presented in Tables 4-14 inclusive. The sight record data on the sex ratio table exceeds the sight record data on the age ratio table by over 3,000 observations. This is due to the fact that it is easier to determine the sex of a turkey from a distance than it is to determine the age of one. In examining the harvest records, it must be kept in mind that the check-station operators were able to age birds only by observation of the distal primary wing feathers. Tables 10 and 11 present 10 years of sex and age ratio data derived from the trapping and relocation program. The yearly variation in the adult-subadult ratio appears to be related to the April, May and June rainfall for the previous year. To illustrate this point, the ratio of 86.5 per cent adults to 13.4 per cent subadults in January and February, 1959, is concerned with the population that underwent extremely heavy rainfall in April, May, and June of 1958 (Table 10). Since 1959, the area in question has experienced steady decreasing total precipitation during these critical months and this is mirrored in the increasing proportion of subadults in the ratio. With these facts evident, the total average adult-subadult ratio for the 16 years might not have a great significance in that it is an average of the 16 years and not take into account the marked annual variation. Management of the turkey population in Florida, therefore, should possibly be directed to an annual control based on the success or failure of the preceding spring hatch rather than being based on a total overall adult-subadult ratio.

Sixteen years of trapping and banding data reveal some interesting facts on movement and longevity (Table 10). The percentages were derived from the total of 2,656 birds since the 489 turkeys trapped in the spring of 1964 had not been subjected to a hunting season and if they died. The 340 band returns from a total of 2,656 wild trapped turkeys represent a 12.8 per cent return, which is interestingly significant when compared with the results of Florida turkey hatchery programs.

(Check next page)
grain (which was terminated in 1953). Of the thousands of birds reared and released under this program, 32.5 per cent were recovered. These figures speak for themselves and it is unnecessary to diagram which program produces the best results. Table 15 presents some interesting comparisons between band and return. From a total of 340 band returns, 64.7 per cent were taken the first year after banding. This harvest emphasizes the advisability of trapping prior to the nesting season so that the released birds have the opportunity to reproduce before going through a hunting season. Otherwise, the program could be an expensive "put and take" operation.

Table 17 represents the distance in miles traveled between points of release and points of recovery. This data is derived from 102 returns of known distance. In addition, there were 194 band returns taken within the same management areas into which the turkeys were released. While these 194 returns are not included in the movement tables, it is safe to assume that most of these returns came from within five miles of the release point because of the size of the areas involved. Over 75 per cent of the returns from within a five-mile radius of the release point and there is no apparent correlation between the movement and the time lapse between release and recovery. Of the extreme examples, the distance traveled by those turkeys that traveled fifteen miles or more had been released only one to two years, and a hen turkey that was retrapped ten years after banding had moved only six miles.

The band recovery from the turkey that moved twenty miles in the first year moved the distance in two weeks since the return came from a road kill only a few miles from the release area. This is probably, therefore, that when a wild trapped turkey moves a considerable distance after release, the movement occurs during the first month or two following release once the turkey becomes established in a particular habitat, annual probability probably does not exceed more than a three-mile radius.

The oldest turkey on record is a hen turkey that carried a band for ten years. She was trapped in 1950 as a subadult of approximately ten months of age in the Fisheating Creek Refuge and released approximately six miles from the trap site in the Fisheating Creek Management Area. Ten years later, this turkey was retrapped in the Refuge. The original band was worn very thin, so it was removed and a new band put on in its place. This hen was then taken to the Collier Wildlife Management Area and released. No further information is available about this bird. This of course is obviously an exception to the average life expectancy of about 18 months. The increase in band returns the sixth year obviously deviates from the declining return curve (Table 15). This, at first, was somewhat perplexing until it was discovered that four of the six returns in this sixth year from banding were received from areas that had been restocked with turkeys trapped under the Pittman-Robertson Wildlife Restoration Program in the early 1950's. Since these areas were closed to hunting for five years following release, it would be fallacious to assume that hunting pressure and poult mortality. In addition, since over 90 per cent of a turkey population's accounts for 90 per cent of the harvest, this information reflects gunning harvest rather than overall mortality. This factor must be kept in mind since it would be fallacious to assume that hunting accounts for 90 per cent of a turkey population's overall mortality.

The annual turkey harvest in Florida can be closely correlated with April, May, and June rainfall the previous spring. Since rainfall is the primary limiting factor for turkey populations, it appears safe to harvest from 40 to 60 per cent of the population annually. Several things must be considered before this information can be understood. Most of the turkeys trapped and banded during the past sixteen years in Florida have been released on management areas which are open to public hunting. There appears to be no correlation between hunting pressure and harvest one year and harvest the following year. Since we are able to examine a turkey population only in retrospect, i.e., examinations of harvest and trapping data to determine age ratios and thus hatch success the preceding spring, certain controls must be in operation before we can make an overall statement that it is safe to harvest half of the turkey population each year. Considerable work remains to be done in developing a reliable census method which will give an accurate picture of the pre-season fall population. Assuming this can be accomplished, allowable harvest ratios could be set prior to the hunting season. Under these conditions, it would be conceivable to allow such a harvest on a given area in a given year. An excellent example of the importance of spring rainfall on a turkey population and the relative unimportance of harvest is cited earlier regarding the Collier Wildlife Management Area in the Section on Climatic Factors. Table 18 presents banding data from the Fisheating Creek Management Area. There have been 485 turkeys banded and released in this management area. Band returns from this area are 32.5 per cent compared to the statewide average returns of 12.8 per cent. A combination of factors explain this situation. Due to the similarity of habitat between the refuge and the management area, there would be less adjustment necessary and therefore movement out of the area is probably less. Secondly, with seven check stations on the area, the degree to which we were able to collect bands from the hunters was greater than on areas with fewer checking stations. Also, while the band returns on the Fisheating Creek area exceed the statewide return by 19.7 per cent, 75.14 and 76.5 of the 138 returns were in the first year after release. This can be compared to the statewide first year return of 64.7 per cent.

(Continued on next page)
Table 4.—AGE RATIOS OF ALL TURKEYS Based on 12,831 Birds

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number</th>
<th>Per Cent</th>
<th>Number</th>
<th>Per Cent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sighting records</td>
<td>1,570</td>
<td>12.6</td>
<td>1,328</td>
<td>10.6</td>
<td>2,898</td>
</tr>
<tr>
<td>Harvest records</td>
<td>5,616</td>
<td>44.9</td>
<td>5,571</td>
<td>44.5</td>
<td>11,187</td>
</tr>
<tr>
<td>Trapping records</td>
<td>3,155</td>
<td>25.5</td>
<td>3,179</td>
<td>25.5</td>
<td>6,334</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>10,341</td>
<td>82.9</td>
<td>10,086</td>
<td>80.6</td>
<td>20,427</td>
</tr>
</tbody>
</table>

Table 5.—SEX RATIO OF ADULTS

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number</th>
<th>Per Cent</th>
<th>Number</th>
<th>Per Cent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sighting records</td>
<td>1,572</td>
<td>12.7</td>
<td>1,313</td>
<td>10.5</td>
<td>2,885</td>
</tr>
<tr>
<td>Harvest records</td>
<td>5,612</td>
<td>44.7</td>
<td>5,551</td>
<td>44.3</td>
<td>11,163</td>
</tr>
<tr>
<td>Trapping records</td>
<td>3,157</td>
<td>25.5</td>
<td>3,177</td>
<td>25.5</td>
<td>6,334</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>10,341</td>
<td>82.9</td>
<td>10,086</td>
<td>80.6</td>
<td>20,427</td>
</tr>
</tbody>
</table>

Table 6.—SEX RATIO OF SUBADULTS

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number</th>
<th>Per Cent</th>
<th>Number</th>
<th>Per Cent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sighting records</td>
<td>1,575</td>
<td>12.7</td>
<td>1,292</td>
<td>10.5</td>
<td>2,867</td>
</tr>
<tr>
<td>Harvest records</td>
<td>5,612</td>
<td>44.7</td>
<td>5,573</td>
<td>44.3</td>
<td>11,185</td>
</tr>
<tr>
<td>Trapping records</td>
<td>3,158</td>
<td>25.5</td>
<td>3,168</td>
<td>25.5</td>
<td>6,326</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>10,345</td>
<td>82.9</td>
<td>10,033</td>
<td>80.6</td>
<td>20,378</td>
</tr>
</tbody>
</table>

Table 7.—AGE RATIO OF GOBLENS

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Per Cent</th>
<th>Number</th>
<th>Per Cent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-57</td>
<td>120</td>
<td>36.8</td>
<td>55</td>
<td>45.8</td>
<td>175</td>
</tr>
<tr>
<td>1957-58</td>
<td>120</td>
<td>36.8</td>
<td>55</td>
<td>45.8</td>
<td>175</td>
</tr>
<tr>
<td>1958-59</td>
<td>120</td>
<td>36.8</td>
<td>55</td>
<td>45.8</td>
<td>175</td>
</tr>
<tr>
<td>1959-60</td>
<td>120</td>
<td>36.8</td>
<td>55</td>
<td>45.8</td>
<td>175</td>
</tr>
<tr>
<td>1960-61</td>
<td>120</td>
<td>36.8</td>
<td>55</td>
<td>45.8</td>
<td>175</td>
</tr>
</tbody>
</table>

Table 8.—AGE RATIO OF HENS

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Per Cent</th>
<th>Number</th>
<th>Per Cent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956-57</td>
<td>100</td>
<td>21.1</td>
<td>100</td>
<td>21.1</td>
<td>200</td>
</tr>
<tr>
<td>1957-58</td>
<td>100</td>
<td>21.1</td>
<td>100</td>
<td>21.1</td>
<td>200</td>
</tr>
<tr>
<td>1958-59</td>
<td>100</td>
<td>21.1</td>
<td>100</td>
<td>21.1</td>
<td>200</td>
</tr>
<tr>
<td>1959-60</td>
<td>100</td>
<td>21.1</td>
<td>100</td>
<td>21.1</td>
<td>200</td>
</tr>
<tr>
<td>1960-61</td>
<td>100</td>
<td>21.1</td>
<td>100</td>
<td>21.1</td>
<td>200</td>
</tr>
</tbody>
</table>

Tables 14 through 19 will appear in Part II, next month, in the June 1966 issue.
Hunting-Trials-Training

North Florida Amateur Retriever Club's second annual

AKC licensed field trial hailed as great success

By JIM FLOYD

The North Florida Amateur Retriever Club's second annual AKC licensed field trial, February 18-21, might be classified as a case of amateurs taking over, or history repeating itself. In the first instance, amateurs won both the Open and Qualifying stakes. In the second case, the same handlers won this year's Amateur and Derby stakes as in 1984.

Winner of the Open was a nine year old veteran, "FC & AFC Lasaape's Neb" handled by Bob Eckis of Boston, New York. Bob was reported as ready to retire his dog after the Florida trial, however, after winning the Open, "Neb" is now back in training. Last year's winner "Sand Gold Kim" was also handled by amateur Jerry Bernstein.

Repeating last years performance and again taking first place in the Amateur stake was "FC Black Jack of Audion," handled by Mrs. Mahlon Wallace. It is reported, but unconfirmed, that this win will give "Black Jack" the title Amateur Field Champion.

At the conclusion of the Qualifying stakes when the officials announced the results, it was difficult to tell if the winner or gallery exhibited the most pleasure. The winner was Justin W. Hardin of Franklin, Ohio, and his labrador "Gloria Loral Jezelle." Tony Berger, who has handled many Champions and National Champions, added to the history of the occasion by repeating his Derby win of 1984 with "Pfeppi of Lakewood." Last year's Derby winner "Federal Bay Boomerang" was also handled by Berger.

The story of a field trial is, however, more than history and handlers; it is more than retrievers and performance. The story of the second annual Flori­da trial is an interesting one.

The rains came, and they came not in showers but in proverbial gully washers. For seven consecutive weekends, rain had fallen on Florida's capital city. The weather report indicated more of the same for the weekend of the North Florida Amateur Re­triever Club's second annual retriever field trial. With one week to go, heavy rains washed out the dam that retained one of the lakes to be used during the trial. Prospects for a "Field Trial in the Sunshine" were indeed dark and damp.

While the rains soaked the terrain and hampered the dog training program of the handlers, it did not dampen the spirits or determination of the mem­bership of the sponsoring Club Plans and prepara­tions were continued in order that the Florida club might again play host to the Nation's largest re­triever field trial in a proper southern manner.

Heavy construction equipment was brought to the field trial area and the break in the dam repaired. Three days after the break was repaired, the lake was again at full capacity and ready for the field trial. This was followed by another invitation to "Southern Hospitality" which was indeed dark and damp. While the rains soaked the terrain and hampered the different stages of the trial, it did not dampen "the same on Thursday evening. The Friday night "Southern Hospitality" was sponsored by the Frichfield Dog Food Company. Saturday night all owners and handlers were guests of the Tallahassee Chamber of Commerce for a field trial in a proper southern manner.

The weather report on Thursday evening re­ported last year's win at the Southern All-Age was won by a seven year old black labrador retriever. Field Champion "Black Jack of Audion," owned by Mrs. Henry G. Keeler, Glaymin, Missouri, shown here with his trainer, and Mrs. N. R. Wallace, Jr., St. Louis, Mo., winning handler.

(start of the trial on Friday. These officers provided not only the vital communication system between the trial officials and the different stakes but han­dled much of the traffic duty. One officer was assigned to each team of judges, and transported the judges from the motel to the trial grounds, remain­ing with them throughout the trial.

The sentiments and feeling behind the outstand­ing support of this trial was summarized in a state­ment by field trial chairman, R. H. (Dick) Johnson. "We feel that our field trial is something more than just another gathering of retrievers and han­dlers. If someone travels from Canada to Florida, we owe him more than just an opportunity to run his dog. This associated activity is one way we can say thanks for coming."

The weather report on Thursday evening re­porting the same on Thursday evening. (Continued on next page)
Combination blind mark triple and land blind. Line situated on top of a dam with first bird being thrown into corn field directly in front of line and left and down at approximately 100 yards. Second bird thrown to fall at 30-degrees left of line and into corn field approximately 45 yards from line. Third bird is a flying cock shot at 45-degrees to left of line from base of dam. Dog and handlers could not see quivers for third bird but only viewed the bird while in the air and after it hit the ground. Upon completion of three marked falls, dog was required to recover a blind planted 120 yards at 75-degrees to left of line and across corn field.

(continued from preceding page)

ported twenty inches of snow for Nebraska and the mid-west, but clear skies during the next three days for Tallahassee, Florida.

The North Florida Amateur Retriever Club's second annual retriever field trial was scheduled to begin at 7:30 A.M., February 19. The first gun was fired promptly at 7:31 A.M., and three minutes later the test dog for the first series of the Open All-Age was sent to fetch a downed pheasant.

The trial was to be concluded by sundown on Sunday, February 21, and just as the sun was dropping behind the trees the last dog of the Amateur All-Age was placed into position to honor the work of a bye dog.

Three days of perfect field trial weather with an average temperature of seventy degrees saw some outstanding retrievers at work, plus some sun burned Yankees. Most outstanding of the retrievers was Open All-Age winner FC & AFTC LaSage's Neb, owned and handled by Robert Eckis. Most outstanding of the sun burns was credited to one of the judges, Dr. Malcolm Filson of Ogunquit, Maine, who had judged the National trial in sub-zero weather but was observed nursing a sun burned nose during the Florida trials.

With the cooperation of the weather man, and an active and enthusiastic field trial committee, the Florida club truly had a successful "Field Trial in the Sunshine."
FISHING

(Continued from page 7)

perceived on the subject, you'll be satisfied with any line that stays on top, however snugly. There's a lot of difference between a line that sits up high and dry with practically no water drag and one that barely floats and requires much effort when it's lifted from the water.

The little cans of "line cleaner" are deceptively named. True, they do clean the line but they also waterproof it and make it ride higher the way it should. The manufacturers have spoken so freely about their lines not needing dressing that they've been forced to label line dressing as "cleaner."

I'm not throwing off on the lines. Boy, the way they float would bring heartfelt cheers from anyone who ever used the old silk ones. But I've never seen one that didn't work better with some dressing on.

Joe Brooks, the famous fly angler, is a real line nut in my book. He still pulls his fly lines off his reel, is a real line nut in my book.

Along survival lines I'm sold on a miniature flare kit put out by Pengun, manufacturers of the little tear gas guns that fit in your shirt pocket.

I spent $11.90 for a kit which includes the little gun and seven flares, done up on a nylon yard. Use is simple. The little flares fit into the gun and are discharged by a primer or cap when you release the plunger or firing pin.

The flare will ascend to about 300 feet and burns with a brilliant red light for six to nine seconds. You can get other colors and also smoke signal cartridges for daytime use.

The little gun also takes regular round shot loads.

In Florida the thing should be hand-filling, yet still a long barrel. The flares will be useful for hunters as well. Florida isn't a flat country is mighty easy to get misplaced in and flares could save you an uncomfortable night.

ROATING

(Continued from page 11)

FLORECO WILDLIFE

May, 1965

MUZZLE FLASHES

(Continued from page 9)

Cutting back the original barrel length of a shotgun usually changes its degree of barrel pitch at muzzle end. For example, a 30-inch barrel that is back to 26 inches will not have the same pitch-down of muzzle. In the same way, a 30-inch barrel is fitted to a shotgun that originally housed a 26-inch barrel, the pitch-down will be different, slight though the difference may be.

Pitch and drop at heel are two gunstock measurements you don't ordinarily have to worry about if yours is an unaltered shotgun made to modern American standards. Only when you encounter a European smoothbore, custom made for a specific shooter, will there be many are—will you likely have extremes in barrel pitch and drop at heel.

For a better adjusted, faster burning shotgun, figure on a barrel length of 26 inches, including a variable choke device, unless you are a serious trapshooter or a special shotgunner. The little gun I've been using has the increased sighting radius of a longer barrel. For upland hunting and waterfowl shooting over close-lying decoys, you don't need a long barrel.

Whenever possible, combine a solid raised rib model shotgun or a ventilated rib model with a muzzle brake or a selective choke device, to overcome any tendency to crossfire, a sighting plane error that an installed vented rib model will be useful for.

In Florida the story is the same. You are a serious trapshooter or a special-occasion shotgunner. You can get other colors and also smoke signal cartridges for daytime use.

The little gun also takes regular round shot loads.

ALONG SURVIVAL LINES I'm sold on a miniature flare kit put out by Pengun, manufacturers of the little tear gas guns that fit in your shirt pocket.

I spent $11.90 for a kit which includes the little gun and seven flares, done up on a nylon yard. Use is simple. The little flares fit into the gun and are discharged by a primer or cap when you release the plunger or firing pin.

The flare will ascend to about 300 feet and burns with a brilliant red light for six to nine seconds. You can get other colors and also smoke signal cartridges for daytime use.

The little gun also takes regular round shot loads.
FISHING SIGNS

(Continued from page 15)

Northern seasons are well-defined. In central Florida the "spring spawning" bass fishing can come on from December through April and the peak can be any time during that period (probably near the middle, though). Of course there is some bass fishing in Florida at any time of year. I was referring to the big fish which feed just prior to spawning.

Crappie or "speckled perch" congregate during the winter months and it seems speck fishing is better during cold weather, but maybe we just fish for them more in cold weather and look for bass when it's warm.

Some of the old farmer's almanac rules for planting are simply superstition. Others have firm basis. A fellow who scots at "moon sign" will still follow tidal tables which amount to the same things.

Bluegills and shellcrackers are supposed to bed on full moons in spring and seem to run pretty true although just how long the full moon can have its effect will vary. If we want to be pernickety we could say there's only one day when the moon's actually full. "Around the full moon" is a better way of putting it.

A moon on the increase is supposed to mean better fishing than a decreasing moon. These things are cumulative though. If a man believes fishing is good only on an increasing moon, he may not give the waning moon a fair trial.

All of these beliefs continue to be questionable because fishermen don't keep records complete enough to be conclusive. The fishes in Florida, I have generally have a whole list of reasons why fishing is good but they take good fishing as a matter of course.

My own worst failing is to go too much by calendar dates. That's not so bad where spawning is concerned but pretty threadbare concerning some salt water migrations. I have completely given up on time of year for schooling bass except that I feel December and January are usually poor schooling months.

The first few hours of darkness are often good, I've concluded I catch more fish just a little earlier-say an hour or so before sunset. Approaching nightfall is consistently a signal for most panfish and bass to start feeding. I used to say dusk was the "witching hour." Of late, I've concluded I catch more fish just a little earlier—say an hour or so before sunset.

There are times, however, when the owners of such small outboards wish for higher, dryer transoms. One reason why water may come over the transom of a small outboard is that a lone occupant often sits in the stern to operate the motor. One trick, according to Brewster, is to put compensating weights such as the anchor or fuel tank in the bow of the boat, to get the transom up.

Another possibility is to fit remote controls amidships so that the operator can sit at the location producing the best hull balance. Even the 19 small motor like Merc, or the Johnson, or any small fishing motor can be operated by remote controls.

When used to attain better balance in small craft, they enhance safety.

Re-setting the tilt-pin on your outboard will often improve the trim of the boat so that water is less likely to come in over the transom.

If the transom cutout on your boat is much larger than is needed for the motor to pivot, plywood panels can be tailored to fit and attached to the transom to reduce the size of the cutout. Or a self-bailing false transom can be fitted. This is basically a cup which catches any water which comes in through the transom cutout and drains it safely away.

Name (please print) ____________________________________________
Address _______________________________ City ______ State ______
Species ______________________________________________________
Type of Tackle ________________________________________________
Boat or Lure Used ________________________ in _____ County ______
Date Caught ______________________________ Caught Witnessed By ______
Registered, Weighed By ___________________________ ______ ______
(Signature of Applicant)

FLORIDA WILDLIFE’S FISHING CITATION

is available without charge, to any and all subscribers to Florida Wildlife Magazine, and their immediate families, who catch any of the fresh-water game fish of the prescribed species and size requirements. Citation, showing recorded date of the catch, will be mailed to the applicant upon receipt of the following application form that has been properly filled out and signed.

Only fishing citation applications received within 90 days from date of catch will be honored.

FLORIDA WILDLIFE’S FISHING CITATION APPLICATION

The Editor, FLORIDA WILDLIFE Date ____________________________
Game & Fresh Water Fish Commission, Tallahassee, Fla.

Please send me the Florida Wildlife Fishing Citation with the inscribed data listed below:

Name (please print) ____________________________________________
Address _______________________________ City ______ State ______
Species ______________________________________________________
Type of Tackle ________________________________________________
Boat or Lure Used ________________________ in _____ County ______
Date Caught ______________________________ Caught Witnessed By ______
Registered, Weighed By ___________________________ ______ ______
(Signature of Applicant)

CUT OUT AND SAVE THIS APPLICATION BLANK

ELIGIBILITY REQUIREMENTS

SPECIES

LARGEMOUTH BASS

8 pounds or larger

CHAIN PICKEREL

4 pounds or larger

BLUEGILL (DREAMI)

1½ pounds or larger

SHELLCRACKER

2 pounds or larger

BLACK CRAPPIE

2 pounds or larger

RED BREAST

1 pound or larger

All fish must be taken from the fresh waters of the state of Florida, as defined by the Game and Fresh Water Fish Commis­ sion. Fish must be caught on conventional fishing tackle, with artificial or live bait, in the presence of at least one witness. The catch must be weighed and recorded at a fishing camp or tackle store within the state by the owner, manager, or an authorized agent of the respective establishment.
SUBSCRIBE NOW TO

Florida Wildlife
The Florida Magazine for ALL Sportsmen

12 Big Issues of
Hunting and Fishing
for only $2.50

TWO YEARS, 24 ISSUES, $4.75
THREE YEARS, 36 ISSUES, $6.25

When sending change of address or inquiring about subscription, please include address impression from most recent copy you have received. To insure delivery of all copies, changes of address should be mailed as soon as possible.

FLORIDA WILDLIFE
Tallahassee, Florida
Enter or extend my subscription for ______ year(s) for FLORIDA WILDLIFE:

☐ Check; ☐ Cash; ☐ Money Order herewith.

Mailing Address:
Name __________________________
Street No. ______________________
City ____________________________
State __________ Zip Code ________

When sending change of address or inquiring about subscription, please include address impression from most recent copy you have received. To insure delivery of all copies, changes of address should be mailed as soon as possible.