



ONE OF THE FIRST ARRIVALS for nesting in the United States is the red-billec pigeon, which ventures into the Lower Rio Grande Valley from Mexico sometime in February. The earliest date recorded on the Santa Ana Federal Wildlife Refuge south of Alamo is February 7, in 958.

The red-billed pigeon, called also the "blue rock," lays only one egg each season. Its twig nest, substantial in com-

parison with that of the mourning dove, is shown here in an ebony tree.

Game and Fish

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JANEY BELL... Assistant Editor
BILL HAYDEN... Circulation

TEXAS GAME AND FISH is published monthly by the Texas Game and Fish Commission. Subscription price \$2 per year. Single copies of current issue 20 cents each.

Subscriptions to TEXAS GAME AND FISH are available from the Austin offices, or from most licensed deputies. Checks and money orders should be made payable to STATE GAME AND FISH COMMISSION, Editorial and Advertising Offices, Walton Building, Austin, Texas. Entered as second-class matter May 19, 1943, at the post office at Austin, Texas, under the act of March 3, 1879.

Postmaster: If undeliverable, please notify TEXAS GAME AND FISH on form 3578-P at the Walton Building, Austin, Texas.

TEXAS GAME AND FISH invites republication of material provided proper credit is given, since the articles and other data comprise factual reports on wild-life and other phases of conservation.

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The Cover



River otters seem to be retreating into obscurity in Texas as civilization crowds them out. With their beautiful glossy fur, they have a high price on their heads. But, in addition, otters have a charm of playfulness delightful to watch. (See related story, page 12.) Cover painting by Don V. Hague.

THE OFFICIAL MAGAZINE OF THE GAME AND FISH COMMISSION DEDICATED TO THE PROTECTION AND CONSERVATION OF OUR NATURAL RESOURCES; AND TO THE IMPROVEMENT OF HUNTING AND FISHING IN TEXAS.

February, 1959

Vol. XVII. No. 2

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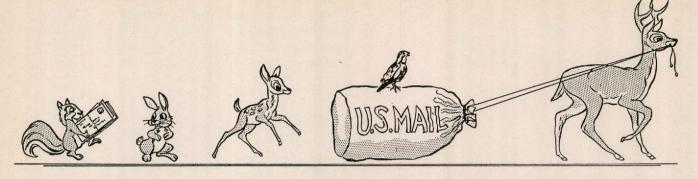
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Heave Ho!



Editor:

I took this photo of a gar caught by Frank Henderson from the Trinity River at Porters Bluff, which is located 12 miles southwest of Kemp. The gar weighs 175 pounds and as you can see it is a pretty good job for the men holding him up in the picture.

I am sure gar grow much larger than the one shown, but this is the largest I have seen around here.

Pictured in the photo are from left to right: Frank Henderson, Robert P. Flowers and Leonard Witherspoon, all of Kemp.

B. W. Hagler Mabank

Worth a Frame

Editor:

I didn't have to close the Christmas number of TEXAS GAME AND FISH for another look at the cover page. In fact, I couldn't even look inside for a few minutes. What a beautiful thought the artist had, for surely no Christmas greeting card ever conveyed a greater meaning than is found in the beauty of our wildlife's habitat. Somehow I tried to find a wise old owl in the tree trunk, also a squirrel somewhere.

Thanks for a lovely reminder of our debt to Mother Nature. I'm having mine framed.

Mrs. Roy C. Jones Brandon

Eager Angler



Editor:

Enclosed is picture and negative of Don E. Carter, aged 12, starting the 1959 year right with a limit of white bass caught at Lemon's Camp on the head of Buchanan Lake. Photography is poor—but fishing was fine.

W. H. Carter McGregor

Gusto!

Editor:

My children really enjoyed the "Wildlife Exhibit." One child brought javelina feet and the head to school this week, and in spite of the fact the carcass was five days old we had a good lesson.

Mrs. O. B. Elliott Beeville

Happy Huntsmen



Editor:

I am sending a picture of our successful deer hunt made in November, 1958. Men are, from left to right, D. I. McCain, Atlanta, Texas; myself; Sylvester Kessler and Orvil Fuller, both of Linden, Texas.

The first morning four bucks were seen and missed. Not a one brought in. Could have been a good case of nerves, as the horns we saw that morning were all large. The hunt, on the Arthur Esser Ranch in Kendall County, ended with each man getting his limit.

H. C. Riley Queen City

Stag Sensation



Editor:

This 11-point stag deer was killed by Jack Hankins of Benavides on Christmas Eve morning (December 24, 1958) on the Mansana Ranch near Benavides in Duval County. He downed it with a Springfield 30-06 and the stag dressed 170 pounds.

It is the first stag deer ever killed in this neck of the woods as far as we know. I believe two were killed in Texas during the 1957 hunting season. As for the 1958 season, we heard of one other stag deer killed and that was by a woman who lives in San Antonio.

Hankins displayed the beautiful stag in downtown Alice and it created quite a stir among sportsmen. For some, it was the first such rare deer they had ever seen. Robbie Robinson

Alice Daily Echo

Man of Many Jasks

by HOWARD D. DODGEN
Executive Secretary, Game and Fish Commission

This annual warden issue of TEXAS GAME AND FISH is intended to be of use to you. If you are to receive the best service your game warden can offer, you need to know him, where he lives, and how he looks. We think you'll want to keep this issue. If you don't already know your warden, you'll want to get acquainted with him.

There are several ways of meeting the game warden. The first is the very obvious one, of going into the field and violating the game laws. It is hoped you never meet your warden in this manner. Sometimes, however, as many wardens today will tell you, their best friends are persons they had to arrest for some violation.

This speaks as well for the sportsman as for the warden who derives no pleasure from arresting the careless hunter or fisherman. Most of the people who violate game laws don't do so maliciously. They'll get careless and shoot too many birds during the height of the excitement of finding them plentiful. Or they'll lose their head when they run into a large flock of turkeys, or any game, and kill too many before getting hold of themselves. Perhaps they'll find fishing good and put too many on the stringer. A few will climb the fence on another man's property where he is not welcome, or they'll shoot from an automobile.

Unfortunately these good citizens make a great deal of extra work for those who must enforce the law. Most of the time it is more difficult to handle a case of this kind than in apprehending a malicious violator.

The malicious violator usually gets caught, and when he does, he gets caught with the goods. There is little trouble in finding enough evidence to warrant a stiff penalty.

The vast number who do have a regard for game laws flinch when they know of violations made by their good friends. Their influence for careful law observance has contributed greatly to the continued improvement in the present-day attitude of the average hunter and fisherman.

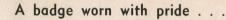
Robbing the local bank will get you landed in jail. Robbing the wildlife bank is not so serious, but it is mighty unpopular with the fellow who takes only his share.

During the month of December, there were 715 convictions for game law violations. These persons paid fines and court costs of \$22,205. While this report indicates the wardens worked hard during December, it is a record of which they are not at all proud. They'd much rather work to prevent violations than to catch violators. They'd prefer to be working some evening with a group of boys or girls than driving down a lonely road looking for jacklighters. They'd get much more pleasure in helping a landowner or sportsman provide for better food and cover for wildlife than having to patrol a lake for netters. They'd get a real kick out of meeting their friends across a conservation banquet table rather than in front of the judge.

The work of some 200 wardens channeled into public aid and education can do a lot more to perpetuate wildlife than merely running down violators. In this you can give utmost cooperation. The wildlife belongs to all of us; let's protect it.

For the warden, this bit of commendation is in order: They are a great bunch of men, subject to human weaknesses, as we all are, but their devotion to their work is unusually intensive and sincere.

In this issue we salute the Game Warden, a friend of everything that lives.





Into the Modern Age

by JANEY BELL

RACK IN THE HCESE AND BEDROLL DAYS, a get-tough policy was the backbone of a game warden's duties. Hunters too often thought of game as loot to be taken any time they could get away with it. To see that they didn't get away with it an experienced peace officer was the best man for the game warden's job. If he wasn't available just anyone would do. It was not a job to be sought after. It took nerve, but not diplomacy. It was a lonely life; a game warden might ride the countryside for as long as 12 months and never see another warden.

He "trained" himself on his own, if he were interested enough, studying a paperbound booklet on game laws. The only legal game hunting took place in the Hill Country, and drew wardens from their posts all over the State when it opened.

Top qualification for the game warden's job was a love of the outof-doors. But that alone is the similarity between the old days and this modern age.

Society shifted its thoughts and changed its attitude toward wildlife

as the years passed. Conservation became the by-word of true sportsmen, and the game warden grew into a new status.

First, his devotion to the outdoors is channeled into concrete knowledge of game and fish needs. Next, he learns the law that backs up these needs. Only when he is graduated from the wardens' school at A. and M. College does he become a full-fleeged game warden. Even then, he annually takes refresher courses and a briefing on all that's new in the game management field.

When he settles down in his assigned community, a different type of work begins, the most valuable contribution he can make to conservation. It is that of keeping his neighbors informed on the problems of local wildlife and the solutions to those problems. He is, in a sense, a salesman. He must sell the program of conservation to those persons who live with the game.

He strives to instill in children a love of the outdoors by introducing them to wildlife and their habits.

When he has the opportunity to do so, he teaches them gun safety and water safety, and other essentials of the outdoors.

Law enforcement, too, has changed with the modern age. The horse, bedroll, and mosquito bar have given way to a car with a two-way radio as standard equipment. Although camping out is still part of the warden's duties, it is not the basic pattern of his life as it used to be.

On the lakes, the game warden uses light weight motor boats; on the Coast, heavier built boats. One cruiser and one sea plane on the Coast make faster and more efficient the swift tracking of law violators there. A sea-going motor scooter is also used on the side of the law.

Throughout all of his duties, though, the modern game warden treasures one ideal—that education of the public is more important than blind adherence to the law. A convert to conservation is worth more than a fine.

He is himself a good citizen and your friend. And this is as it should be.

Wardens' Who's Who

. . a directory for you to use.

Game Warden Supervisors:



Henry Burkett Box 178 Alpine



Robert L. Cross 3507 Milam Houston



J. L. Hardie 516 S. Peach Tyler



A. W. Lewis Courthouse Dallas



J. H. Maggard 2101 Teckla Amarillo



Captain E. M. Sprott, Director Law Enforcement Division



M. B. Mullinax Box 274 Rockport



J. B. Phillips 424 Brady Ln. Austin



G. M. Stricklin Star Rt. 2 Beeville



Box 106 Catarina



Herbert C. Ward John R. Wood Box 223 Brownwood



Harley Berg Wildlife Exhibit Snapper Reefs Waco



Frank Mebane



Bob Snow Trapping

Game Wardens and their home towns: (See wardens by counties, page 9-11)



Charlie Adams Bay City



H. R. Adams Fort Davis



Gene Ashby Austin



Sherman Bales Center



C. E. Beezley Houston



Bill Belote Jefferson



Brady



W. F Bennett, Jr. Brent Bergstrom Fairfield



George E. Berry H. A. Bierman San Augustine



Fort Worth



Lake L. Black Amarillo



D. W. Bowers, Jr. Chas. L. Boynton San Marcos



Quanah



San Saba



Junior L. Briggs Ben. P. Brooks Wake Village



Hubert L. Brocks Waco



Joe B. Brower Houston



T. C. Browning, Karnack



Wm. R. Burch



C. L. Burdett Pleasanton



Reb H. Burks Paris



C. W. Burnette Clarksville



Bert G. Cade Tyler



W. C. Cave Wichita Falls



Chamberlain El Paso



Wm. C Childress J. D. Clay, Jr. Pearland Liberty



Louis H. Clymer Whitney



Carl Covert Rockdale



W. G. Craig Menard



Raymond Custer Uvalde



G. A. Crooks Robert Lee



Raymond Davee Zapata



G. P. Davis Shamrock



Mack L. Davis Groves



Olan H. Davis Silsbee



S. J. DeVoll Alpine



Fat. L. Donnelly Littlefield



Maurice S. Dry Eastland



James Rix Duke Nacogdoches



C. D. Edmordson Fobert S. Evirs CLero



Junction



Harold Farley Bastrop



R. Z. Finchum Galveston



R. L. Flanagan Bluffton



Cecil Fox Spur



W. J. Frazier San Juan



A. W. Fromm Matador



Hugh Frost Linden



Floyd I. Gaby Temple



Ben F. Gaddy Austin



Walter Garland High Island



W. A. Genfry Beaumont



John Gerganess Grand Prairie



Fred L. Gliam Athens



N. E. Glover Breckenridge



William Gooch Raymondville



J. B. Goodw'n Sonzales



Kilgore



Robert G. Goss J. W. Gregory Kerrville



Warren Gu-hrie Johnson City



L. C. Hallum Huntsville



Frank Hamer, Jr. Brownwood



David Hancock Graham



Ray S. Hanson League City



E. E. Hargett Bellville



Wm. T. Harris Mineral Wells



Noel J. Head Seminole



Adolph Heep Fredericksburg



Wm. D. Henry Goliad



Frank C. Henze Mathis



Walter D. Hicks Memphis



John Hill, Jr. Fort Worth



Hinojosa Harlingen



Travis L. Hobbs Gainesville



G. W. Holbein Hebbronville



Dick Holbein Tilden



M. C. Hollister Lake Jackson



Roy J. Holstein Floresville



Murrell Hopkins Kaufman



W. D. Howell Burkeville



Billy Ray Hoyle Pearsall



Thomas Hughes Hempstead



Harry Iverson Throckmorton



J. L. Jackson Sulphur Springs



Curtis Jenkins Port Lavaca



Rob. B. Jessee Gilmer



Cl'fford Johnson Meridian



Nolan Johnson Sonora



Clarence Jones Trenton



John D. Jones Abilene



C. D. Jung Midland



Leakey



Conros



C. F. Keller, Jr. C. V. Kincannon James Kincannon Leo Kohleffel Jasper



Columbus



C. D. Kornegay **Palestine**



Ed. M. Lacy Lampasas



Fred Lambert Kingsville



R. N. Lancaster Cotulla



Hill Lawrence Pottsboro



John A. Lockett Ozona



Will Ray Long Denton



Calhoun Lovelace Vega



Wm. V. Lowry Jayton



Robert Lys Navasota



Ellis W. Martin Rocksprings



Raymond Martin W. A. Masters Hitchcock



Kerrville



Charles Maynard H. T. Mayne Corpus Christi



Angleton



C. M. McBee Brackettville



Wylie



Kingsville



Chas. McCallum J. L. McDougald Robt. Middleton Brownsville



Geo. T. Miller Rockport



Robt. E. Miller Pecos



Glenn Mitchell Henderson



J. C. Moore Stephenville



P. D. Moseley Canadian



Boboy R. Moses J. D. Murphree Coldspring



Orange



R. C. Nichos Palacios



Wardlow Northam Mt. Pleasant



L. D. Nuckles Castroville



Robert Ogburn Lufkin



Frank Ordener Canadian



Curtis Oswalt Beeville



J. R. Palmer Rockport



Arlis C. Payne Anahuac



B. C. Peebles George West



Harol D. Penney Brownwood



Martin Peterson Joe Pigg Humble



Lowie



Richard Pinckney C. T. Pittman Llano



Seymour



James E. Pond Carrizo Springs



Woody Pond Canyon



James H. Pratt Galveston



Wm. H. Pratt Lamesa



Bubba G. Reec San Antonio



Jr. Sweetwater



M. T. Reinhardt, Wm. V. Riddle Lubbock



Joe Riggs Carthage



W. -. Rinehart San Angelo



Bryan



J. D. Robertson Harold Robinson Gene Samford Groveton



Pineland



H. H. Schoen Falfurrias



Jack Schuh Mexia



Carson L. Seago Ross Seale Quitman



Hearne



Dave Sellstrom Woodsboro



John A. Shaddix New Boston



Clifton Shafer Bishop



Aubrey J. Shaw Chas. A. Short Georgetown



Anahuac



Grover Simpson Austin



Earl Sloan Aransas Pass



Wilbur Smith Marble Falls



Bil y M. Sprott Bu-net



Morris Stallcup Wichita Falls



A. A. Stein Da las



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Wm. R. Stewart Rio Hondo



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Starkey Whitehorn Borger



C. E. Whitenton Laredo



A. D. Willmann San Antonio



Comfort



Eugene Willmann Marvin C. Wills E. A. Wolfsdorff Brenham



Hallettsvil e

Address



B. T. Wood Beaumont



Jack Woodford Miami



L. R. Wooten Jacksboro



J. W. Worthington High Island

LAKE WARDENS

Lake	Warden	
Abilene	J. D. Jones	E
Austin	Ben Gaddy	6
B. Dam	J. W. (Bill) Kincannon	I
	J. B. Weaver	F
Belton	Floyd Gaby	E
Benbrook	Harold A. Bierman	3
Bridgeport	Harold A. Bierman	3
Buchanan	R. L. Flanagan	I
Buffalo	Woody Pond	E
Caddo	T. C. Browning, Jr.	F
Cherokee	Glenn C. Mitchell	E
Corpus Christi	F. C. Henze	E
Devils	Norbin Taylor	(
Falcon	Raymond H. Davee	Z
Ft. Phantom Hill		E
Garza-Little E.m	W. R. Long	I
Grapevine	W. R. Long	I
Houston	Martin A. Peterson	F
Kemp	C. L. Boynton	5
Lavon	Charles R. McCallum	I
Leon	M. S. Dry	2
Medina	L. D. Nuckles	E
Oak Creek	Glendale Crooks	F
Possum Kingdem	W. T. Harris	1
	N. E. Glover	I
Red Bluff	Robert E. Miller	F
San Angelo	Walter Rinehart	(
Sheldon Reserv'r		I
Stricker	James J. Tisdale	I
Texarkana	Benjamin P. Brooks	I

Hill Lawrence

Grover Simpson

Ben Gaddy

Aubrey Shaw

Texoma

Travis

Box 401, Abilene 304 Josephine, Austin Box 313, Jasper Box 434, Woodville Box 3127, Temple Brd Floor, County Courthouse, Fort Worth 3rd Floor, County Courthouse, Fort Worth Harlow Fanch, Bluffton Box 801, Canyon Route 2 Karnack Box 85, Henderson Box 675. Mathis General Delivery, Del Rio Zapata Box 401, Abilene Box 871, Denton Box 871, Denton Box 553. Humble 510 W. 10th St., Quanah Box 531 Wylie 207 W. Sadosa, Eastland Box 154 Castroville Box 103. Robert Lee Mineral Wells Breckenridge Box 343, Pecos County Courthouse, San Ar.gelo Rt. 5, Box 563-A, Houston P. O. Bcx 205, Rusk Box 134, Wake Village Route 1, Pottsboro 604 Josephine, Austin

6207 Shoalwood, Austin

Box 12, Georgetown

Lake Warden Address 2020 Sunnybrook, Tyler Tyler Bert G. Cade Whitney Louis Clymer Box 456. Whitney Worth Harold A. Bierman 3rd Floor, County Courthouse, Fort Worth J. R. Hill 3rd Floor, County Courthouse, Fort Worth

WARDENS BY COUNTIES

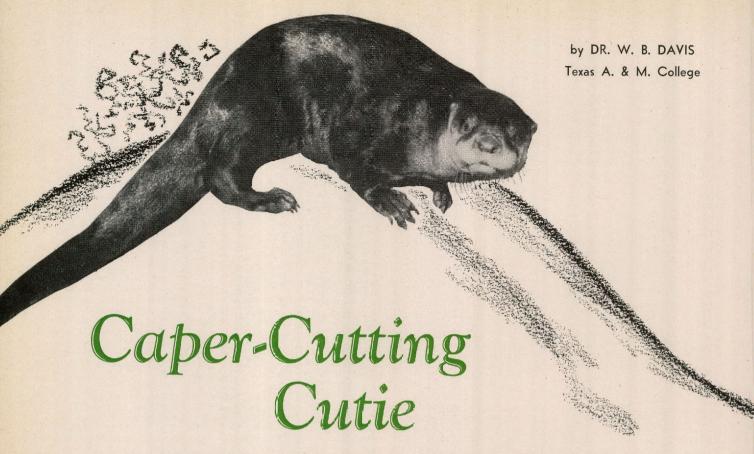
County	Warden	Address
- Sounty	Warten	Address
Anderson	Clarence D. Kornegay	1300 E. Neches, Palestine
Andrews	Noel J. Head	Box 991, Seminole
Angelina	Robert Ogburn	434 S. Bynam, Lufkin
Aransas	James R. Palmer	Marine Lab., Rockport
	Geo. Miller	Marine Lab., Rockport
	Earl Sloan	Box 247, Aransas Pass
Archer	W. C. Cave	4316 Cunningham,
		Wichita Falls
	Morris E. Stallcup	3114 Sherwood, Wichita Falls
Armstrong	Lake L. Black	829 Maryland, Amarillo
Atascosa	Chester Burdette	Box 481, Jourdanton
Austin	E. E. Hargett	Box 95, Bellville
Bailey	Patrick L. Donnelly	Box 149, Littlefield
Bandera	R. L. (Dick) Stevens	Box 54-A, Bancera
Bastrop	Harold Farley	1003 Hill, Bastrop
Baylor	C. T. Pittmar	Box 12, Seymour
Bee	Curtis L. Oswalt	Box 7, Beeville
Bell	Floyd I. Gaby	Box 3127, Temple
Bexar	Bubba G. Reed	401 W. Nueva, San Antonio
	Alton D. Willmann	401 W. Nueva, San Antonio
Blanco	Warren B. Guthrie	Box 195, Johnson City
	Wilbert Smith	Marble Falls
Borden	William H. Pratt	Big Spring
Bosque	Clifford H. Johnson	Box 237, Meridian
Bowie	B. P. (Phil) Brooks	Box 134, Wake Village
	John A. Shaddix	Box 783, New Eoston

FEBRUARY, 1959

County	Warden	Address	County	Warden	Address
Brazoria	W. C. Childress	Box 181, Pearland	Floyd	Alfred W. Fromm	P. O. Box 422, Matador
	M. C. Hollister	207 Walnut, Lake Jackson	Foard	C. L. Boynton	501 W. 10th. Quanah
	H. T. Mayne	Box 566, Angleton	Fort Bend	H. T. Mayne	Box 566, Angleton
Brazos	J. D. Robertson	Box 894, Bryan	Franklin	John L. Jackson	Box 425, Sulphur Springs
Brewster	Sanford J. DeVoll	Box 698, Alpine	Freestone	Brent E. Bergstrom	Box 324, Fairfield
Briscoe	Woody Pond	Box 801, Canyon	Frio	Billy Ray Hoyle	
Brooks	Harvey Schoen	Box 393, Falfurrias	Gaines		Box 906, Pearsall
Brown	Frank A. Hamer, Jr.	P. O. Box 80, Brownwood		Noel J. Head	Box 991, Seminole
	Harol D. Penney		Galveston	R. Z. Finchum	2313 Avenue J, Galveston
Burleson	Carl Covert	Box 473, Brownwood		James Pratt	Box 173, LaMarque
Julicson	Marvin C. Wills	Box 281, Rockdale		Walter L. Garland	High Island
Burnet		Box 945, Brenham		Ray S. Hanson	League City
Jurnet	R. L. Flanagan	Harlow Ranch, Bluffton		Raymond Martin	Hitchcock
	Billy M. Sprott	409 E. Kerr, Burnet		James W. Worthington	Box 741, Galveston
	Wilbur Smith	Marble Falls	Garza	W. V. Lowry	Box 704, Jayton
Caldwell	D. W. Bowers	Rt. 1, Box 322, San Marcos	Gillespie	Adolph Heep	Box 66, Fredericksburg
Calhoun	Curtis Jenkins	Box 361, Port Lavaca	Glasscock	C. D. Jung	Midland
Callahan	John D. Jones	Box 401, Abilene	Goliad	W. D. Henry	Box 35, Goliad
Cameron	Robert E. Middleton	Box 1550, Brownsville	Gonzales	J. B. Goodwin	Route 1, Gonzales
	W. R. Stewart	Box 491, Rio Hondo	Gonzales	Emmett Wolfsdorff	
	Ed Hinojosa	Harlingen	Cross		Route 1, Hallettsville
Camp	Robert B. Jessee		Gray	Jack Woodford	Box 26, Miami
THE RESERVE OF THE PARTY OF THE		Box 366, Gilmer	Grayson	C. Hill Lawrence	Route 1, Pottsboro
Carson	Jack Woodford	Box 26, Miami	Gregg	Glenn Mitchell	Henderson
Cass	B. P. (Phil) Brooks	Box 134, Wake Village		Robert G. (Bob) Goss	Box 651, Kilgore
Castro	Patrick L. Donnelly	Box 149, Littlefield	Grimes	Robert Lys	1412 Oakwood, Navasota
Chambers	Walter Garland	High Island	Guadalupe	Calvin Turner	135 S. San Marcos, Seguin
	Charles A. Short	P. O. Box 852, Anahuac	Hale	Wm V. Riddle	2608 37th St., Lubbock
	Arlis Payne	P. O. Box 667, Anahuac	Hall	Walter D. Hicks	P. O. Box 43, Memphis
Cherokee	James J. Tisdale	P. O. Box 205, Rusk	Hamilton	Clifford H. Johnson	Box 237, Meridian
Childress	Walter D. Hicks	P. O. Box 43, Memphis	Hansford		
Clay	W. C. Cave	4316 Cunningham,	Hardeman	Starkey Whitehorn	Box 103, Borger
anaj	W. G. Gave	Wichita Falls		Charles L. Boynton	510 W. 10th St., Quanah
	Marria E Stallaur		Hardin	Olan H. Davis	P. O. Box 182, Silsbee
Cashana	Morris E. Stallcup	3114 Sherwood, Wichita Falls	Harris	Clarence Beezley	Rt. 5, Box 563-A, Houston
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Coleman	Frank A. Hamer, Jr.	P. O. Box 80, Brownwood		Martin A. Peterson	Box 553, Humble
	Harol D. Penney	Box 473, Brownwood	Harrison	T. C. Browning, Jr.	Route 2, Karnack
Collin	Charles R. McCallum	Box 531, Wylie	Hartley	Calvin Tow	Dalhart
Collingsworth	G. P. Davis	Box 326, Shamrock	Haskell	Harry B. Iverson	Box 176, Throckmorton
Colorado	Leo Kohleffel	Box 721, Columbus	Hays	D. W. Bowers, Jr.	Rt. 1, Box 322, San Marco
Comal	W. F. Sumbling	Rt. 1, Box 120,	Hemphill	P. D. Moseley	
		New Braunfels	Hemphili		Box 337, Canadian
Comanche	Maurice S. Dry			Frank Ordener	Box 415, Canadian
Concho	Wm. F. Bennett, Jr.	207 W. Sadosa, Eastland	Henderson	Fred Gilliam	Box 746, Athens
		Box 307, Brady	Hidalgo	J. W. Frazier	Box 851, San Juan
Cooke	Travis L. Hobbs	Box 13, Gainesville	Hill	Louis Clymer	Box 456, Whitney
Coryell	Harley Berg	2316 Lasker Ave , Waco	Hockley	Wm. V. Riddle	2608 37th St., Lubbock
	Hubert Brooks	Box 1623, Waco	Hood	J. C. Moore	Box 165, Stephenville
Cottle	Walter D. Hicks	P. O. Box 43, Memphis	Hopkins	John L. Jackson	Box 425, Sulphur Springs
Crane	T. F. Wheelis	Fort Stockton	Houston	Harold Robinson	Groveton
Crockett	John A. Lockett	Box 735, Ozona		Allen Woolley	Route 1, Crockett
Crosby	Cecil Fox	424 W. Harris, Spur	Howard	William H. Pratt	Big Spring
Culberson	N. L. Chamberlain	Box 1423, El Paso	Hudspeth	N. L. Chamberlain	Box 1423, El Paso
	Edgar Sturdivant	P. O. Box 3252, Station A,	**************************************	Edgar Sturdivant	P. O. Box 3252, Station A,
		El Paso		Edgar Sturdivant	
	George Vickers	Box 756, Van Horn		C . W. 1	El Paso
Dallam	Jess Felts			George Vickers	Box 756, Van Horn
Janam		Box 727, Dalhart	Hunt	Charles R. McCallum	Box 531, Wylie
Della-	Calvin Tow	P. O. Box 722, Dalhart	Hutchinson	Starkey V. Whitehorn	Box 103, Borger
Dallas	John I. Gerganess	321 Choctaw, Grand Prairie	Irion	Walter Rinehart	County Courthouse,
	A. A. Stein	1st Floor, County Court-			San Angelo
		house, Dallas	Jack	David B. Hancock	Graham
Dawson	William H. Pratt	Big Spring	Jackson	Wm. R. Burch	Edna
Deaf Smith	Calhoun Lovelace	Box 226, Vega	Jasper	J. W. Kincannon	Box 313, Jasper
Delta	John L. Jackson	Box 425, Sulphur Springs		W. D. Howell	Brookeland
Denton	W. R. Long	Denton		Olan H. Davis	
DeWitt	C. D. Edmondson	509 4th St., Cuero	Loff Dord		P. O. Box 182, Silsbee
Dickens	Cecil Fox		Jeff Davis	Harvey Adams	P. O. Box 514, Fort Davis
Dimmit		424 W Harris, Spur	Jefferson	W. A. Gentry	1466 Edwin St., Beaumont
	James E Pond	Box 401, Carrizo Springs		Bentley Wood	271 Franklin, Beaumont
Donley	G. P. Davis	Box 326, Shamrock		Mack L. Davis	3168 Berry Ave., Groves
Duval	George W. Holbein	Box 222, Hebbronville	Jim Hogg	George Holbein	Box 222, Hebbronville
Eastland	Maurice S. Dry	207 W. Sadosa, Eastland	Jim Wells	Harvey H. Schoen	Box 393, Falfurrias
Ector	C. D. Jung	Midland	Johnson	Billy Ray Swope	Cleburne
Edwards	Ellis W. Martin	Box 563, Rocksprings	Jones	John D. Jones	Box 401, Abilene
Ellis	John I. Gerganess	714 Shawnee, Grand Prairie	Karnes	Curtis L. Oswalt	Box 7, Beeville
	A. A. Stein	1st Floor, County Court-	Kaufman	Murrell B. Hopkins	Box 407, Kaufman
		house, Dallas	Kendall		
El Paso	N. L. Chamberlain	Box 1423, El Paso		Eugene O. Willmann	Box 363, Comfort
1 430			Kenedy	W. H. (Bill) Gooch	Box 653, Raymondville
	Edgar Sturdivant	P. O. Box 3252, Station A,	14	Fred Lambert	Rt. 1, Box 585, Kingsville
		El Paso	Kent	Wm. Victor Lowry	Box 704, Jayton
Erath	J. C. Moore	Box 165, Stephenville	Kerr	Jack Gregory	511 Josephine, Kerrville
Falls	Geo. E. (Jack) Schuh	308 S. Ross, Mexia			
Fannin	Clarence T. Jones	Box 985, Trenton	Kimble	Robert S. Evins	420 S. 16th St., Junction
Fayette	J. B. Goodwin	Route 1, Gonzales,	King	Cecil Fox	424 W. Harris, Spur
The second secon		, dolladios,			opui
Fisher	M. T. Reinhardt, Jr.	1409 Campbell, Sweetwater	Kinney	C. M. McBee	Box 213, Brackettville

County	Warden	Address	County	Warden	Address
Kleberg	Fred Lambert	Rt. 1, Box 585, Kingsville	Reeves	Robert E. Miller	Box 343, Pecos
	C. M. Shafer	Bishop	Refugio	Dave W. Sellstrom	P. O. Box 123, Woodsboro
	J. L. McDougald	523 S. Lantana Drive,	Roberts	Jack Woodford	Box 26, Miami
		Kingsville	Robertson	Ross Seale	202 Norwood Lane, Hearn
	C. D. Vann	Corpus Christi	Rockwall	John I. Gerganess	714 Shawnee, Grand Prairi
nox	C. T. Pittman	Box 12, Seymour		A. A. Stein	1st Floor, County Court-
amar	Reb H. Burks	Box 521, Paris			house, Dallas
amb	Patrick L. Donnelly	Box 149, Littlefield	Runnels	Glendale Crooks	Box 103, Robert Lee
ampasas	Ed M. Lacy	Box 101, Lampasas	Rusk	Robert G. Goss	Box 651, Kilgore
aSalle	Russell N. Lancaster	Box 154, Cotulla		Glenn C. Mitchell	Box 85, Henderson
avaca	Emmett Wolfsdorff	Route 1, Hallettsville	Sabine	W. D. Howell	Brookeland
ee	Carl Covert	Box 281, Rockdale		King Taylor	Hemphill
	Harold Farley	1003 Hill St., Bastrop		Gene Samford	Pineland
eon	Seth Taylor	Box 96, Normangee	San Augustine	George E. Berry	Route 2, San Augustine
iberty	J. D. Clay, Jr.	Box 803, Liberty		Gene Samford	Pineland
imestone	Geo. E. (Jack) Schuh	308 S. Ross, Mexia		Rix Duke	P. O. Box 64, Nacogdoches
ipscomb	P. D. Moseley	Box 337, Canadian	San Jacinto	Bobby Moses	Coldspring
	Frank Ordener	Box 415, Canadian	San Patricio	Franklin C. Henze	Box 675, Mathis
ive Oak	F. C. Henze	Box 675, Mathis		Dave W. Sellstrom	P. O. Box 123, Woodsboro
	B. C. Peebles	Box 24, George West		Earl Sloan	Box 247, Aransas Pass
lano	Wilbur Smith	Marble Falls	San Saba	Junior L. Briggs	Box 275, San Saba
	Richard Pinckney	Llano	Schleicher	Nolan Johnson	Box 5841, Sonora
	R. L. Flanagan	Bluffton	Scurry	M. T. Reinhardt, Jr.	1409 Campbell, Sweetwater
Loving	Robert E. Miller	Box 343, Pecos	Shackelford	N. E. Glover	Box 269, Breckenridge
Lubbock	William V. Riddle	2608 37th St., Lubbock	Shelby	Sherman Bales	Box 627, Center
ynn	William V. Riddle	2608 37th St., Lubbock	Sherman	Starkey V. Whitehorn	Box 103, Borger
Aadison	Seth Taylor	Box 96, Normangee	Smith	Bert G. Cade	2020 Sunnybrook, Tyler
Agrion	Bill Belote	Box 209, Jefferson	Somervell	J. C. Moore	Box 165, Stephenville
idion .	T. C. Browning, Jr.	Route 2, Karnack	Starr	Norman Swanberg	Box 704, Rio Grande City
Martin	William H. Pratt	Big Spring	Stephens	N. E. Glover	Box 269, Breckenridge
Aason	D. V. Williams	Box 576, Mason	Sterling	Glendale Crooks	Box 103, Robert Lee
	Chas. Adams	Bay City	Stonewall	Wm. Victor Lowry	Box 704, Jayton
Matagorda	R. C. Nichols	P. O. Box 27, Palacios	Sutton	Nolan W. Johnson	Box 5841, Sonora
Maverick	C. M. McBee	Box 213, Brackettville	Swisher	Woody Pond	Box 801, Canyon
Medina	L. D. Nuckles	Box 154, Castroville	Tarrant	Harold A. Bierman	3rd Floor, County Court-
viedina		2106 Avenue U, Hondo	Tarrant	Haroid A. Bierman	house, Fort Worth
	August Timmerman			I D U:II	
Menard	W. G. Craig	Box 776, Menard		J. R. Hill	3rd Floor, County Court-
Midland	C. D. Jung	Midland	Tables	John D. Jones	house, Fort Worth
Milam	Carl Covert	Box 281, Rockdale	Taylor	John D. Jones	Box 401, Abilene
Mills	Ed M. Lacy	Box 101, Lampasas	Terrell	T. F. Wheelis, Jr.	Box 275, Fort Stockton
Mitchell	M. T. Reinhardt, Jr.	1409 Campbell, Sweetwater	Terry	Noel J. Head	Box 991, Seminole
Montague	Joe Pigg	511 W. Tarrant, Bowie	Throckmorton	Harry B. Iverson	Box 176, Throckmorton
Montgomery	Chas. V. Kincannon	Box 188, Conroe	Titus	Wardlow Northam	Box 431, Mt. Pleasant
Moore	Starkey V. Whitehorn	Box 103, Borger	Tom Green	W. T. Rinehart	County Courthouse,
Morris	Wardlow Northam	Box 431, Mt. Pleasant		6 111	San Angelo
Motley	Alfred W. Fromm	P. O. Box 422, Matador	Travis	Gene Ashby	Star Rt. 7, Box 213, Austin
McCulloch	Wm. F. Bennett, Jr.	Box 307, Brady		Ben Gaddy	604 Josephine, Austin
McLennan	Harley Berg	2316 Lasker Ave., Waco		Grover Simpson	6207 Shoalwood, Austin
	Hubert Brooks	Box 1623, Waco	Trinity	Harold Robinson	Groveton
McMullen	J. R. Holbein	Box 23, Tilden	Tyler	J. B. Weaver	Box 434, Woodville
Vacogdoches	Rix Duke	P. O. Box 64, Nacogdoches	Upshur	Robert B. Jessee	Box 366, Gilmer
Vavarro	Fred L. Gilliam	Box 746, Athens	Upton	Clifton D. Jung	Midland
Newton	J. D. Murphree	Sheriff's Dept., Orange	Uvalde	Raymond E. Custer	Box 328, Uvalde
	W. D. Howell	Brookeland	Val Verde	John A. Lockett	Box 735, Ozona
	J. W. Kincannon	Box 313, Jasper		Norbin Taylor	General Delivery, Del Rio
Volan	M. T. Reinhardt, Jr.	1409 Campbell, Sweetwater	Van Zandt	Murrell B. Hopkins	Box 407, Kaufman
Vueces	C. M. Shafer	Bishop	Victoria	C. D. Edmondson	509 4th St., Cuero
	C. D. Vann	Corpus Christi		Wm. D. Henry	Box 35, Goliad
	Charles Maynard	4810 Johnson Drive,	Walker	Lewis C. Hallum	Box 973, Huntsville
		Corpus Christi	Waller	Thomas A. Hughes	Hempstead
Ochiltree	P. D. Moseley	Box 337, Canadian	Ward	Robert E. Miller	Box 343, Pecos
	Frank Ordener	Box 415, Canadian	Washington	Marvin C. Wills	Box 945, Brenham
Oldham	Calhoun Lovelace	Box 226, Vega	Webb	C. E. Whitenton	419 Matamoros, Laredo
Orange	W. A. Gentry	1466 Edwin St., Beaumont	Wharton	Chas. Adams	Bay City
	J. D. Murphree	Sheriff's Dept., Orange	Wheeler	G. P. Davis	Box 326, Shamrock
Palo Pinto	Wm. T. (Bill) Harris	P. O. Box 430, Mineral Wells	Wichita	W. C. Cave	4316 Cunningham St.,
	Leon Stowe	Box 265, Graford (Possum Kingdom)		Morris E. Stallcup	Wichita Falls 3114 Sherwood, Wichita F
Panola	Joe Riggs	Box 181, Carthage	Wilbarger	C. L. Boynton	510 W. 10th St., Quanah
Parker	David B. Hancock	Graham	Willacy	Wm. H. Gooch	Box 653, Raymondville
Parmer	Patrick L. Donnelly	Box 149, Littlefield	Williamson	Aubrey J. Shaw	Box 12, Georgetown
Pecos	T. F. Wheelis, Jr.	Box 275, Fort Stockton,	Wilson	Calvin Turner	135 S. San Marcos, Seguin
Polk	W. B. Triplett	Box 984, Livingston		R. J. Holstein	Floresville
otter	Lake L. Black	829 Maryland St., Amarillo	Winkler	Robert E. Miller	Box 343, Pecos
Presidio	Harvey Adams	P. O. Box 514, Fort Davis	Wise	Joe Pigg	511 W. Tarrant, Bowie
Rains	Carson Seago	P. O. Box 687, Quitman	Wood	Carson Seago	P. O. Box 687, Quitman
	Woody Pond	Box 801, Canyon			
Randall		Midland	Yoakum	Noel J. Head	Box 991, Seminole
Reagan Real	Clifton D. Jung		Young	David Hancock	Graham
	Charles F. Keller, Jr.	P. O. Box 212, Leakey		D LII D	9
Red River	Charles W. Burnette	1014 W. Washington,	Zapata	Raymond H. Davee	Zapata

FEBRUARY, 1959



"PLAYBOY OF THE WATERWAYS" is an apt monicker for the river otter because he and his pals often spend hours on end tobogganing down their favorite slides or playing tag with care-free abandon in their favorite pool. Judged by human standards, the otter is an inquisitive, happy-go-lucky individual who takes things as they come.

The river otter is a member of the weasel family that, like its cousin the sea otter, has become adapted to living in or near water. Its more distant relatives are the badgers and

the skunks.

At first glance one might mistake it for a large "wiener" dog. Otters have a long, slender, streamlined body, a long, thick, tapering tail, and webbed feet; the head is broad and flat, the neck long; the legs are short. Its fur is short and dense. The upper parts are rich, glossy, dark brown, with grayish on the lips and cheeks. The under parts are paler, tinged with grayish. Total length is about 4 feet; tail, 18 inches; hind feet, 5 inches. Adults weigh 12-15 pounds (occasionally as much as 23

River otters occur on all the ma-

jor land masses of the world, including North America, South America, Europe, Asia, and Africa. In Texas, they are found principally ir the area bordering Louisiana and ir the Gulf Coast marshes. They are relatively rare and seldom are seen except by fishermen and trappers. It is my impression that their numbers are decreasing in Texas because of the encreachment of "civilization" and that before long they, too, will follow the black bear, the prairie chicken, and the buffalo into oblivion. We have records, some of them dating back 25-30 years, from the following Texas counties: Brazoria, Brazos, Chambers, Jefferson, Jasper, Matagorda, Nacogdoches, Newton, Orange, Polk, Rusk, Titus, Tyler, Victoria, and Wood.

Largely aquatic in habit, river otters usually frequent lakes and larger streams. In the Gulf Coast region, however, marshes, bayous, and brackish inless afford suitable habitat. They are expert swimmers and divers and can remain under water for several minutes if necessary. They are not bound to water, however, and when occasion demands they do not hesitate to travel overland from

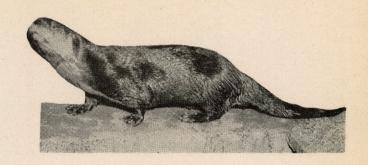
one body of water to another. Their movements on land appear awkward. Supported by the four short legs, the long body is looped along somewhat like a giant measuring

Slides where the otters play are situated on some steep clayey or snow-covered bank. The otters play "follow the leader" in tobogganing, with the front legs folded back, from the top of the slide into the water below

Otters are notorious wanderers in their chosen habitat and an animal may range over several miles of a waterway. In the North when the streams freeze over in winter, otters, of necessity, must travel considerable distances overland in search of open water where food can be procured. They are active throughout the year.

The den of the otter varies with the locality and availability of sites. Lee Yeager describes two dens he found in the Mississippi delta, one in a large hollow cypress tree, the other in a hollow cypress log. The hollow tree stood among "a thousand others" on the muddy, log-strewn margin of a deep pool in a cypress

The river otter abandons itself to fun in spite of invading civilization.



swamp. A hole in a large root just above the water level served as an entrance to the den. There was little within the protecting cypress shell that could be called a nest. The highest and driest part of the hollow was some four or five feet square and was littered with a few old leaves, sticks, and decayed bits of wood. The remainder of the floor was of black mud. This den was inhabited by a pair of otters and their two offspring. The den in the hollow log had its entrance about one foot above the water. Other dens have been described as burrows in a bank with an underwater entrance. Throughout much of the year, otters use areas under shelving rocks or behind roots of trees at the water's edge for temporary hiding places.

The food of otters is chiefly fishes and crayfish. K. F. Lagler and B. T. Ostenson report that the spring food of Michigan otters consists of game fish (15.9%), forage fishes (22.7%), unidentified fish remains (13.8%), crayfish (35.0%), amphibians (7.5%), other vertebrates (0.9%), insects (4.2%), and snails (trace). In California, Grinnell,

Dixon and Linsdale report that otters feed chiefly on crayfish and fishes. In Montana, K. R. Greer reports the following foods in percentages of frequency of occurrence: fish (93.2%), invertebrates (41.2%), amphibians (18.4%), mammals (6.1%), birds (5.2%), and reptiles (0.4%). We have no data from Texas.

L. H. Smith describes the fishing activity of an otter as follows: "The animal came directly up stream into the still water above the highway bridge. It crawled out on a rock about 6 inches above the water and stayed there for perhaps one minute, looking intently into the water, about 8 feet deep. It slid off into the water and came up immediately with a 10-inch squaw fish in its mouth. This fish was eaten in about nine minutes. . . ." A second squaw fish was similarly caught and eaten. After eating each fish, the otter cleaned its face and whiskers by rubbing the sides of its head on a rock. At no time did it use its paws to clean itself.

River otters are thought to begin breeding in late January or February and the one to five young are born in late March or April after a gestation period of from 49-62 days. By June the young ones have developed to the extent that they can follow their parents about. The male and female probably mate for life and both parents assist in caring for the young. The family group stays together until the young ones are about a year old, at which time the mother usually is ready to care for a new litter.

River otters are classed as furbearing animals in Texas. A special \$50 Beaver-Otter Trapping License is required before they can be trapped legally by anyone who traps outside the county in which he resides. They can be taken legally only during the months of December and January. Prime pelts have superior wearing qualities and consequently they command a good price on the fur market.

Even so, in my book river otters are worth much more alive than dead. I certainly would travel far to have the treat of watching a group of otters sporting in some secluded pool oblivious to man's A-bombs and supersonic rockets.



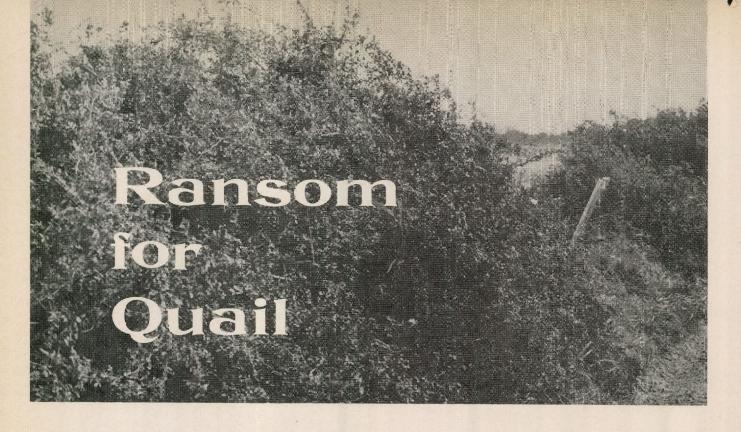
A playful grin seems to say, "Last one in . ."



Cool and content, the otter swims and dives.



Splash time over, it scampers from the pool.



Cover and care are a small price to pay for game.

by DAN LAY wildlife biologist

WITH LAND USE BECOMING MORE AND MORE INTENSE, future quail populations are going to be increasingly dependent on planned development or protection of quail cover. Herbicides applied from planes and helicopters, bulldozers, burning, mowing, close grazing, and clean cultivation are serious threats to quail habitat.

Until now most quail have been accidental by-products of normal land use. In the future, it is going to take a lct of work and cooperation to keep our quail factory from being dismantled piece by piece.

On a prairie or in "clean-farming" areas, good woody cover suitable for quail is scarce. Often, a covey of birds can be found at each of the available cover spots. Where this situation occurs there may be an opportunity to have more quail by establishing more spots of cover.

In most of the pine woodland region of eastern Texas, there won't be quail at every spot of good cover because cover is not scarce. The food supply generally limits quail numbers and often a covey can reach cover by flying in any direction. So developing more cover would be useless in such situations.

Quail hunters know the kind of woody cover their local birds use. Generally such cover consists of shrubs and vines low enough to shade out the grass and thick enough to keep out the hawks. If most such local spots are being used by quail, the chances are good that more spots would result in more quail.

Renovating established rootstocks of native plants is the fastest way to grow new spots of cover. Often these are present but not serviceable to quail due to heavy browsing by livestock. Fencing out the cattle may be all that is necessary. On some soils, fertilizing the existing plants will make them grow rapidly.

If rccts are not present in the right places, various kinds of cover can be planted. Generally it is best

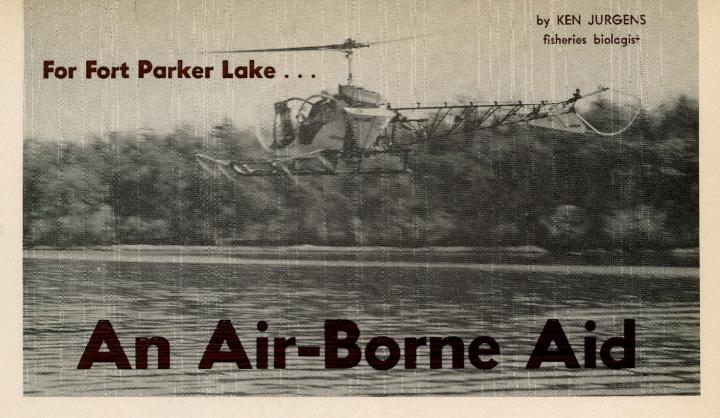
to work with local species which are adapted to the soil and climate, most of which can be transplanted readily in the winter season. Some that are especially good are yaupon, rattan, smilax or greenbriar, grape, prickly pear (where it is adapted), plum, and blackberry.

Multiflora Rose

F NATIVE SHRUBS ARE NOT AVAILABLE, multiflora rose may be the best planting. It is difficult to grow west of College Station, but to the east there are some excellent hedges.

Warden Reb Burks has had remarkable success growing it for quail cover near Paris at his Lake Crook area. And the Newton Project near Buna has some demonstration plantings about eight years old. These older plantings have grown to widths of 10 feet and heights of 12 feet. Birds use them regularly.

For several years the Game and
• Continued on page 29



FOR YEARS THE FISHERMEN OF THE MEXIA AREA had excellent crappie, or white perch, fishing from the mouth of the Navasota River above Fort Parker Lake to the small cam 4½ miles upstream. Fishing steadily fell off and finally, during the drouth when the river and the lake became separated by a mud bank across the mouth of the river, the people of the area decided to eradicate the fish in the river and restock. This work was done by a commercial fisherman who agreed to pro-

vide the chemical and the labor in return for the commercial fish killed.

The lake itself was not treated. Even though the river was restocked after the treatment, it was again infested with undesirable fish species from the lake as soon as the river began to flow after the end of the drouth. Fishing once more deteriorated.

The Texas State Parks Board requested that a study be made by Game and Fish Commission fishery biologists to determine what man-

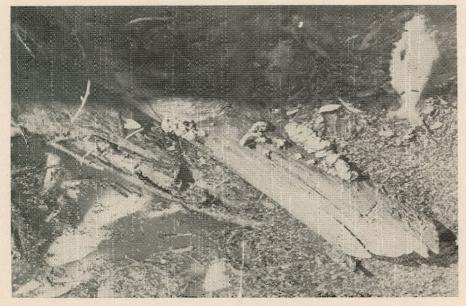
agement practices could be employed to improve fishing in the lake itself. Research showed that the lake and the river had a good crappie population, but their appetites were abated by the millions of shad present.

Recommendations were made that the lake and the river be treated with rotenone for a selective kill of the shad.

Game and Fish Commission biologists about this time were experimenting with aerial application as a technique for spraying liquid rotenone for selective kills of shad. Possum Kingdom Lake had recently been treated by spraying from fast, fixed wing aircraft. Fort Parker Lake seemed an ideal place to experiment with the slower, more maneuverable helicopters.

When land owners along the river and the Texas State Parks Board and the City of Groesbeck all agreed that a selective kill of shad should be attempted, an experiment was set up to compare the treatment of the lake proper by helicopters with the treatment of the river with boats.

The day before the selective treatment was to be made biologists from Fort Worth and Austin arrived at the lake to place marker buoys along the section lines so that the helicop-



Scores of shad rise to the surface of the lake when robbec of their oxygen supply.

Cortinuea on page 29



"Law of the Sea" is discussed by Fred Taylor of the State Department. Listening, from left, are Dudley Gunn, secretary-treasurer, Louisiana; W. C. Holmes, Alabama, and Howard Dodgen, Texas.

T's A THOUSAND MILES across the Gulf of Mexico from Brownsville to the West Coast of Florida, along the line of the 26th meridian.

In this wide-open expanse of water, however, is found some of the best fishing in the world. Sportsmen and commercial fishermen alike from all the states between Texas and Florida are constantly working the waters for big catches of marine life.

As the population increases and more fishermen go out, the coastal fishing problem has gotten bigger until it has reached a point "where something must be done."

This something is in the form of the Gulf States Marine Fisheries Commission. This compact group is made up of the states of Florida, Alabama, Mississippi, Louisiana, and Texas, all fronting on the great Gulf bowl.

This commission is a creation of the Congress of the United States and of the individual legislatures of the states involved. It is the tool of the fish and game commissions of the states collectively, in a program to cooperate with the Atlantic States Marine Fisheries Commission, for the welfare and protection of coastal fishing.

Prober

The Commission meets in March in New Orleans, to take up programs outlined at its meeting last October in Biloxi, Miss. The group will meet again in October in Corpus Christi. H. D. Dodgen, executive secretary of the Texas Game and Fish Commission, is this year's chairman. Membership of the commission is confined to official legislative and executive appointments, and the administrative officers of each of the states.

The Gulf Coast States Commission was created July 16, 1949, with the final ratification of the program by the states involved. It was an offspring of the Atlantic States Commission, which had been organized earlier. The U. S. Fish and Wildlife Service is the coordinating agency between the two groups. Funds for the commission operations, however, come from legislative appropriations from the various states involved.

Through cooperative work of the member states, uniform laws and regulations can be promulgated for the protection of fishery resources and for the industry of each state. The goal is to have regulations which will be coastal rather than local in scope.

The original concept gives the commission the duty of recommending to the governors and legislators of the respective states such measures as, "after study and consideration, it deems advisable for the preservation of the fisheries."

The compact permits an advisory committee of both sports and commercial fishermen.

Right now a study of coastal shrimping is one of the important projects of the commission.

As an indication of the work undertaken, reports of the various states are made. Five major projects were undertaken last year in Alabama. They include: Submerging car bodies in from 7 to 10 fathoms of water; finding hard bottoms in areas easily located by fishermen according to land reference marks; facilitating



Walter Sheppard, Forida



Chester Delacruz, Mississippi; Garet Van Antwerp, Alabama



Stanford Morse and Hermas Goutier, Mississippi

of the Gulf

by L. A. WILKE

good anchorage by the use of discarded cable to old car bodies; cooperating with the Coast Guard for location of buoys and widespread publicity to keep shrimp trawlers away from submerged bodies.

The state also carried on an oyster seeding program, developed reefs and began an intensive shrimp study.

Florida reported intensive shrimp studies and an intensive study of parasites and diseases of fish. Among other studies were marine botany, the migratory pattern of fishes, the Red Tide, bottom studies and research on trout and tarpon. A great deal of work also was done on Florida bay estuarine studies.

In Louisiana the state commission has worked hard for more rigid enforcement of pollution problems, providing technical information for industrial companies, planting of seed oysters and further development of the shrimp industry.

The state also made recommendations for additional protective legislation for shrimp. New closed seasons were provided by the legislature closing inside waters twice yearly for protection of young shrimp.

In Mississippi much research work also was done on the oyster and shrimp industry. There was also a complete revision of the seafoods laws of Louisiana during 1958.

A menhaden bibliography also was completed. Samples of other fish caught in menhaden nets were studied, along with other plans to aid both fishing and the industry.

Work in Texas included the redistricting of the coastal area and setting up regional work programs along the 600 miles of shoreline. Under this program several new oyster reefs were established, an artificial snapper reef was constructed and studies were begun on both fisheries and shell.

As a part of this work the marine fishery biologists are studying oysters, shrimp, pollution, and salinity.



A. O. Rappelet, Louisiana; Robert Folsom, Alabama

In the coordination of this work the U. S. Fish and Wildlife Service also has made numerous studies, obtaining essential data. These include estuarine studies, research on industrial fish and oyster investigations. The service is investigating exploratory fishing and gear, red snapper trawling, shrimp exploration and it provides a market news of fish landing at the various ports along the Gulf Coast.

In the estuarine studies restoration of certain coastal waters and wetlands are being considered. This is a long-range study, covering the coastal waters within the territorial limits.

The Gulf States Marine Fisheries Commission has its offices in the Audubon Building in New Orleans. W. Dudley Gunn is the secretary-treasurer. Other officer besides Chairman Dodgen is Hermes Gautier, vice chairman, who lives in Pascagoula, Mississippi. Texas members of the commission are Senator Jimmy Phillips of Angleton and Wilson Southwell of San Antonio.



Retiring Chairman W. C. Holmes, left, Alabama, receives a service plaque from E. J. Grizzaffi, Louisiana.



Ernest Mitts, Florida; Lamar Clement, Louisiana





Commercial fishermen poast fine catches of trout. reds, and drum, but they take less than 5% of total.

POUNDS OF PROOF

. that the coastal fishermen's dreams have come true.

> by TERRANCE LEARY coastal biologist

IT'S PAY-OFF YEAR FOR SALT WATER ANGLERS!

Catches along the whole Texas Coast are as good as

ever, according to many old-timers.

Predominant among the fishes reaped in the bay harvest are the popular speckled trout and redfish. Not only are both of these fishes abundant, but the trout are running larger on the average than in the previous years. Reports from marine biologists, fishermen, and sportswriters all tell the same story.

One group of San Antonio sport fishermen landed 1,200 fish in a weekend's fishing in the Rockport area. "The spottails are definitely here in greater numbers than in years in almost all areas of the Coast," says Harv Boughton of the Houston Post.

Why the big increase in fish population and why so sudden?

Actually, the answer is quite simple and the present population rise has long been predicted by the fishery biologist. It all stems from the famous freeze of 1951 which decimated fishes along the Texas and Mexican Coasts; it has taken these seven years for the fish population to recover.

Mexico, incidentally, was the hardest hit. One account states: "An airplane trip over some 50 miles of the Mexican Laguna from Eighth Pass to a point known as the Third Pass showed approximately 15 dead trout to the square yard. There were countless thousands of dead drum, pike, and redfish, but the seatrout apparently were hardest hit in that area."

Climatic conditions, too, dealt the fishery a staggering blow. The severe drought of 1951-1957 probably did not help the recovery. Trout spawn at an early age, usually in the second year, while redfish do not reach maturity until their fourth year. The increase in the size of the trout is due to the aging of the fishes spawned since 1951.

Although the biologists in the Coastal Fisheries Division at first experienced difficulty in locating the redfish fry in the fall of 1957, the spawn was a huge and successful one. These young fishes began to enter the fishing in the summer of 1958 as "rats" or undersized fish. (Legal commercial limit is 14 inches.) It soon became apparent to everyone that the redfish had returned in force. The rats of last summer constitute the bulk of the present redfish harvest. These fishes are now about 17 inches in length. Those from the hatch of 1956, also a good crop, are now about 25 inches long.

Persons studying the Texas fishery have strongly suspected an increase in catch though the records of commercial production do not yet indicate it. During recent years there has been a general dropping trend in the commercial statistics which are influenced by market prices and legislated restrictions on commercial fishing as well as the availability of the fish. The extent of the sport fishery catch recently disclosed by a survey conducted by Belden Associates under contract to the Texas Game and Fish Commission has shown that a huge majority of the harvest is made by sport fishermen. It has long been estimated that this was the case, but few if any realized that Texas sport fishermen landed nearly 22 times the poundage caught by the commercial fishermen or more than 37 million pounds of trout, redfish, drum, and flounder in 1958. This brings the combined catch of these four species to more than 38 million pounds in 1959.

We can see that catches are up, fishing is great, and that 1958 gives us the results of a seven year buildup. A fishery that can return after a catastrophic setback with continued commercial fishing and ever increasing pressure from sport fishermen is a healthy one.



Full stringers float beside rows of successful fishermen and more fish await the toss of the bair at Aransas Pass Basin.



As a biologist measures a catch from Aransas Bay, he notes many large trout, an indication of an underfished population.

Fishing Figures

by JOHN R. HALL*

NEARLY THREE-QUARTERS OF A MIL-LION TEXANS — 748,000 — went salt water fishing somewhere along the Texas Coast during the 12 months from September 1957 through August 1958. Slightly more than half a million-539,000-of these non-commercial fishermen accounted for the 12-month harvest of Texas' most important species of salt water fish: speckled trout, redfish, drum, flounder, and shrimp. Those were two of the major findings of the state-wide survey of salt water fishermen just conducted for the Commission by Belden Associates, marketing research firm headquartered in Dallas.

The survey, designed to measure the sportsmen's harvest of the five major species, was conducted during October and early November of last year. A total of 90 trained interviewers made personal visits at more than 2,000 households in every region of the State to gather information on salt water fishing. Dwellings called on were scientifically selected as a representative sample of the Texas population. The salt water fishermen who supplied the information on which survey estimates were based numbered 639, some of whom were contacted only after five calls had been made at their homes. A description of the survey methods was reported in the November 1958 issue of Texas Game and Fish.

The study is believed to be a pioneering effort in the application of

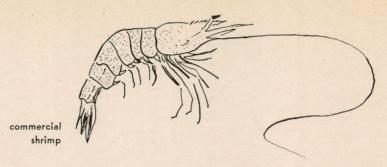
*Mr. Hall was the project director for the extensive study on salt water fishing reported in this article. He first joined Belden Associates in 1952 and became assistant manager of its Mexico City office. After returning to the University of Texas for a master's degree in economics, Mr. Hall rejoined the marketing and opinion research firm last year. widely-used marketing research techniques—personal interviews with a sampling of the public—to the measurement of the salt water fish harvest.

On the basis of the survey results, the following estimates of the 12month harvest of four species have been made:

	Number	Pounds
	Caught	Caught
Speckled		
Trout	17,135,000	20,905,000
Redfish	6,916,000	9,199,000
Drum	2,250,000	4,343,000
Flounder	1,621,000	2,577,000

It is essential for the reader to

speckled trout redfish drum flounder



bear in mind that these estimates of the harvest are not exact; they are based on a sampling of the population and should be interpreted as being within a 10 per cent tolerance range of their true values. This means that a complete count of the whole population might vield an estimate anywhere from 10 per cent under to 10 per cent above the survev estimate.

These estimates, when added to figures on the commercial catch of the four main species, have enabled the Commission to develop new vardsticks to aid it in its management and conservation of the salt water fish resources of the State. The catch of out-of-state fishermen using Texas waters has not been measured.

Because of the relatively small number of sportsmen who catch shrimp, only a rough estimate of the harvest of this species-about three million pounds annually—was possible.

The harvest of the species reported here is accounted for by 72 per cent of the sportsmen who did any salt water fishing from September 1957 through August 1958. Twentyeight per cent caught none of the five species.

During the survey period, more than half (58 per cent) of the salt water fishermen caught speckled trout. Almost two out of five fishermen (39 per cent) caught redfish and about one out of four (26 per cent) caught drum. Flounder were also taken by almost one out of four fishermen (24 per cent) and shrimp were caught by less than one out of ten (9 per cent).

The majority of these species is caught while fishing from a boat. And the majority of the fishermen use rod and reel, except for shrimp, which is taken about as much with a drag seine as by trawling.

Where did Texas anglers have

their best luck? It varied somewhat, depending on the species and the Freeport area produced more redfish Aransas areas lead in the speckled trout and drum harvests, each section accounting for nearly equal and Laguna Madre areas all yielded presented in the table below:

A good measure of the pressure

area of the Coast. The Galvestonand flounder than any other region of the Texas Coast, Both the Galveston-Freeport and the Corpus Christiamounts. The Sabine, Matagorda, relatively smaller portions of the total catch. The complete picture on the percentage of each species caught and the shares of total days sportsmen spent fishing in each area is

	P	er cent of	total fish o	caught	Per-cent of
	Speckled			te	otal fishing
Area of the Coast	Trout	Redfish	Drum	Flounder	days
Galveston-Freeport	31%	40%	30%	51%	36%
Corpus Christi-Aransas		25	34	18	31
Laguna Madre		12	19	7	14
Matagorda		19	10	16	13
Sabine		4	7	8	6
		_			
	100%	100%	100%	100%	100%

being placed by sportsmen on various areas of the Coast is the percentage of total fishing days spent in each area. This is shown in the last column on the right in the table above. Two-thirds of all salt water fishing is done in two areas: Galveston-Freeport and Corpus Christi-Aransas and roughly two-thirds of the catch of each species is taken from these areas. Main reason for the heavy pressure on these two is both are sections of the coast where population is concentrated heaviest. This would appear to verify the fact that, as a general rule, people do most of their salt water fishing in the area of the Coast that is closest to where they live. While this was found to be true for the fishermen who live within 100 miles of the coastline, a separate analysis of the group who live farther inland revealed that the Corpus Christi-Aransas area was where most of the inland fishermen's time was spent.

When is the best time for each species? There are two ways of looking at this question. June, July and August vielded the biggest catches of speckled trout, but the February catch was the best when it is related to the number of fishing days Texans spent wetting their hooks that month. September was the best month for redfish from both the standpoint of volume caught and days fished. The late summer months and fall were all good for drum, best months were October and November. The pattern for flounder was much the same as for drum, the biggest volume being taken in August, September, and October, the last month being the best.

The average salt water fisherman in Texas went fishing in the bays and Gulf along the State's Coast nine times during the 12-month period. The State average is heavily weighted by the fishermen living within 100 miles of the Coast; they

fished about 12 days a year, compared to an average of five for all the fishermen living farther away.

Most people who fish the Coast spent from three to six hours a day at this sport. The average is about five hours.

How popular a sport is salt water fishing? The survey found 8 per cent of the population gave it a try at least once between September 1957 and August 1958. This compares with 32 per cent who did any kind of fishing (salt or fresh water) in Texas during the same period.

In a sense, seacoast fishing is a man's sport: of the Texas population, the survey shows 49 per cent are male; among all fishermenfresh or salt water—66 per cent are male; and, among salt water fishermen, 73 per cent are male.

SECRET OF THE SOUTHERN OYSTERS

Morning the traditional "R" months—fresh, plump, and tasty oysters one day may find their way into summertime menus if biologists along the South Texas coastline have their way. The secret of this interesting development lies in the fact that commercial oysters south of Rockport live "backwards."

Normally, most oysters (that is those north of Rockport and on up the Atlantic Coast) spawn from May through September. This spawning period leaves the oysters weak and lean throughout the summer months—the reason for commercial fishermen keeping hands off. Not until fall have the oysters recovered enough to grow fat, and they are harvested commercially in winter. Of oysters farther south little was known until last year.

Since six artificial reefs near Port Isabel were laid in April, no spawning of the commercial oyster, Crassostra virginica, has taken place. Therefore, only the coming winter months are left in which the oysters can reproduce. This appears to be logical since the Port Isabel oysters are at their best and healthiest period during the summer months. Just the right time to replace the gap in the harvesting of oysters farther north. And perfect for the South Texas commercial fishermen who will have the market to themselves.

The Port Isabel oyster reefs were started because of oysters dying out on a large scale near Brownsville. The reasons were obvious. Their home, South Bay south of the Brownsville ship channel, was filling up with silt and mud. Boca Chica Pass had already closed, and the spoil from the ship channel had

been dumped into the bay. Resulting siltation hastened the destruction of the oyster beds. The bay in a few years will be completely useless for the oysters.

A sideline advantage to the artificial oyster reefs will be sport fishing, even if the commercial interests do not develop. The first month the reef was in the water a small oyster, Ostrea equestris, spawned. Although it does not grow large enough to justify commercial harvesting, it could benefit sportsmen. As the oyster and other small marine animals such as crabs and shrimp sprout on the reef, small fish will come to the reef to feed on them. The small fish in turn will lure the big game fish, and the sports fishermen can take it from there.

Buoys have been placed on the reefs by the Game and Fish Commission to help fishermen find these reefs which may develop into choice fishing spots.

Commercial oyster harvesting, though, is still the prime aim of the reef. If it proves a success, more reefs may be laid along the south coastline. Private investors may join the effort to cultivate oyster beds in the area if it looks profitable. Biologists are not overlooking the profit angle in their research. When the reports on the Port Isabel oyster reef are complete, they will show all the expenses entailed in the reef's development. Profits will be calculated from a "per acre, per year" standpoint. In all, some 40,000 acres of submerged land should be suitable for oyster reef development.

Success of the reef will be quite a bonus for seafood addicts who relish the thought of oysters all year 'round.

Good news for

summer menus!

Compiled from information by JOE BREUR coastal biologist

by JANEY BELL



... and Shooting

This Month: Is Conversion Worthwhile?

by JOHN A. MASTERS

THE AMERICAN GUN MARKET has been flooded with military arms of all sorts during the years following World War II. Some are good, and can be made into excellent hunting rifles; others are little better than junk. Some can be used in virtually their original form, but others require extensive alteration.

Of those available, the best are the Springfield, the Enfield, and the Mauser 98. All of these can be used as is, but with a little expense, a really nice rifle can result.

Some time ago, I came into a 98 Mauser made by the Brno works in Czechoslovakia. The rifle was in mint condition, and was chambered for the 8 x 57 Mauser cartridge. I decided to see what could be done to convert it to a fine sporting rifle.

E. C. Burnett, an old gunsmith buddy of Breckenridge, agreed to tackle the job. We consulted at some length before we decided to shoot for about a seven-pound rifle.

The first step was to remove the barrel from the action. Chucking it up in his lathe, E. C. cut it back to 22 inches, crowned the muzzle and turned the typical Mauser "steps" off to give the barrel a more pleasing contour.

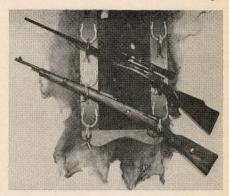
Like all Mauser 98's, the bolt handle shape was wrong. Burnett altered it for scope use by a cut-andweld process, and polished and engine turned the bolt for its entire length. He next fitted a Redfield Ir. base for mounting a scope.

By this time, he had become enthusiastic about the rifle, and suggested that I add a 300 Series bolt sleeve to allow the use of the slide safety. I agreed. That decision led also to the selection of a good single-stage adjustable trigger.

Before starting with the stock, E. C. made a number of measurements. He works from a rough blank rather than the semi-inletted type, a hunk of cordwood to me. When he finished, it was an entirely different story. He made the pistol grip a shallow curve similar to a shotgun grip, and added checkering and a little oak leaf pattern carving that really did wonders for the appearance of the piece.

The payoff came when we finished and attached the scope. Rifle, scope and mount went 7 pounds 2 ounces—by far the lightest sporter I have ever owned. I decided to get all I could out of it, and told Burnett to rechamber it to the 8MM/06 case; his reamer turned out to be the 8MM/06 Improved, a little hotter cartridge, and one that I like very much.

The finished rifle is the most beautiful piece I have ever owned, but it is a lot more than that, I can load 62 grains of 4831 behind a 150-grain Sierra or Speer spitzer bullet and get better than 3000 ft./sec. velocity. That's a deer killer par excellence. I can load the 170 round-nose or the 175 spitzer ahead of 61 grains of 4831 and be set for the big stuff like elk or mule deer. Or I can go

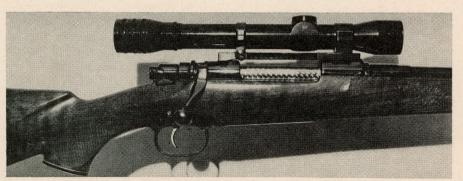


Converted rifle, top, compared with plain 98
Mauser as used by German army.

to the 225-grain Speer or the 250-grain Barnes bullet and be ready for anything on the North American continent. I can even load 125-grain bullets and use it for a varmint rifle.

I prefer to gauge a rifle's performance by what it will do for three shots from a cold barrel. With the 150-grain bullets, this one went into $\frac{7}{8}$ of an inch. With the 175 spitzer, the three slugs went into one ragged hole. That's good enough for any kind of shooting.

Costwise, my conversion was no bargain, but a fine custom rifle like this one never is. All told, including price of the gun, scope mount, and all the work E. C. did, I parted with just under \$200, but I have a rifle I wouldn't sell for \$500. With my favorite hunting scope, a Stith Bearcub 4X, I have the rifle that will accompany me on most of my future hunts, and one that I swear no hoss trader will ever separate me from.



Altered bolt handle and slide safety add to gun's efficiency what stock handiwork does to its beauty.



Trout and Red Fishing

Where to find trout and reds on the Texas Gulf Coast was discussed in the January issue of TEXAS GAME AND FISH. Now I will talk about how to catch them. When I get my tackle together for a trip to the coast I always include a supply of Tony Accetta No. 5 spoons and some yellow bucktails. This is one of the all-time favorites for catching trout. I learned how to use this spoon from such masters as Hart Stilwell and Felix Stagno. Here are some of their tricks:

SKIPPING A SPOON:

Attach the bucktail on the ring holding the hook, but place it below the hook. This will make the spoon ride on top easier. Tie a leader about 24 inches long on your line, and tie the leader directly to the spoon. Do not use a snap swivel. Be sure that the leader is started through the hole in the spoon from the bottom and that the knot is on the bottom. This will help the spoon to ride on the surface.

Now, make a cast, and just as the spoon reaches the surface of the water draw the rod tip backward smoothly. This action starts the spoon sliding along the surface of the water. Hold the rod tip straight up with the reel on level with your face. Reel in fast enough to keep the

spoon skipping in a straight line toward you. To make it skip you must lower the rod tip, take two quick cranks on the reel, then stop reeling and pump the rod twice. Repeat this action constantly until the spoon is in. This rod-and-reel action must be accomplished very fast and smoothly without any jerks. The spoon will skip from side to side on the surface in a zig-zag pattern that will drive trout crazy. I have had trout follow a spoon being played in this manner for a hundred feet, chopping at it all the way, and finally grabbing it right at the rod tip.

This is the only way to play a spoon when fishing shallow water; that is, water from 6 to 18 inches deep, or water that contains a lot of floating sea weed or grass. If the grass condition is very bad, replace the treble hook with a single hook. This will allow you to fish longer without fouling your spoon.

The skipping technique takes a lot of practice and hard work, but it really pays off. It will fool a big sow trout when nothing else will.

JIGGING A SPOON:

When you fish water 3 feet deep or more, use the jigging method. This is accomplished by using the rod and reel exactly the same as you do in skipping a spoon, the only difference being that you let the spoon sink as soon as it hits the water. After the spoon has sunk about 3 feet, start the pumping action with the rod tip and go through the same procedure as in skipping a spoon, but don't let the spoon come to the surface. Do not jerk the rod tip while jigging. Be sure you slow down the procedure and use gentle pumps and longer pauses between reel cranks.

There is a variation to this method that is very similar, but it is not as effective. Lower the rod tip until the rod is parallel to the water and very close to the surface. The rod should be at a 90 degree angle to the line. In other words, if you cast the spoon directly in front of you, then the rod should be pointing directly to your left or right, as you prefer. As the spoon sinks give it a fast, sharp jerk with the rod tip, reel in the loose line rapidly, and repeat the jerk. Continue this until the spoon reaches the rod tip. Other lures such as a Plugging Shorty, Fisherman's Friend, and Pico Perch, may be used with these jigging methods.

Other variations can be productive such as the slow, steady crank and the fast, steady crank. These are simple and easy. The slow steady crank should be done by holding the rod tip straight up in the air, to reel in the lure. Usually this method is used with lures that have a lot of action built in, those that wiggle easily when retrieved slowly.

The fast, steady crank should be done with the rod tip close to the surface of the water and pointing at the lure. As the lure enters the water let it sink about 2 feet deep, then reel in steady and very fast. A spoon works fairly well fished this way, but may have a tendency to twist the line when retrieved. A wiggle diver type of lure or a lure with very little built-in action is the type to use for this method of fishing.

A good combination to use with

the slow steady retrieve is a Dixie Jet Spoon with about 14 inches of leader tied to the hook ring and a yellow bucktail and triple hook tied to the end of the leader.

One of my favorite ways to fish for trout is to use a floating, topwater lure like a Heddon Zara Spook or a Creek Chub Darter in a white or silver flash color. The action to be used with top-water lures is just the opposite we use in black bass fishing. Fishing for bass we try to splash water with the lure; fishing for trout we do NOT splash water with the lure, just jiggle the lure or make it dart from side to side with quick erratic movements. But be sure to let the lure rest for a few seconds after each jiggle. I usually fish a top-water lure when I fish the flats in shallow water while wading.

I hesitate to mention color when talking about lures for trout and reds. Such a variety of colors is available in all lures that it is hard to choose. My many experiences while fishing for trout convinced me that no one color is best. What is good today might not be good tomorrow. The color good at one place on the Coast might not be good at all 50 miles away. I have seen the time when a silver spoon with a yellow bucktail was the only thing to use one day, and the next day a gold spoon without a bucktail was the best lure. I saw a clear plastic lure take trout every cast in one place where a red plastic or brown plastic lure exactly like the clear one wouldn't catch a thing. A week later the red plastic lure took trout when the clear one would not. The best advice I can give about color is to take a good variety of lures of different colors when you go fishing and try them all until you start catching fish. When you catch a trout on one lure stay with that particular lure. Don't change. Then again I have seen the time when trout would hit anything I threw in the water, but this is the exception, not the rule.

When fishing for reds with a spoon I do not use a bucktail. I use a heavy spoon that sinks fast and I try to fish the spoon as close to the bottom as possible while using the jigging method.

POPPING CORKS:

Most fishermen use a popping cork when fishing with shrimp. It also is very effective when used with lures. I like to use the weighted popping cork with about 18 inches of 20-pound leader. I fish spoons, artificial shrimp, or just plain bucktails with a treble hook on the end of the leader. However, I try to use small lures with a popping cork. This rig should be fished just opposite from a top-water lure. When the cork hits the water, let it sit still for a minute, then tighten up the line and jerk the rod hard and sharp. The louder the noise and the bigger the splash the cork makes the better. Be sure to let it sit still for a long time between jerks. However, I have seen some fishermen use a cork fast; they jerk and reel as fast as they can all the way in. I have also used a yellow fly rod jig with a popping cork for trout and a white fly rod jig with a popping cork for white bass.

Using live shrimp with a popping cork is probably the best combination of all for catching any kind of fish on the Gulf Coast. I like to use a No. 10 treble hook on my popping cork rig with shrimp. But I have seen Coast fishermen use single hooks all the way from a No. 6 to a No. 5/0 on this same rig. Fish this type rig very slowly and leave it in the water as long as possible. Be sure to keep a tight line and hold the rod tip straight up in the air ready to strike hard and fast the moment the cork bobs from a trout strike. You never know what you are going to catch with this rig. I have seen everything from piggy perch to tarpon strike a live shrimp, so don't be surprised at what you catch with this combination. Variety is the spice of life, and, Boy! this rig is spicey!

Another way to use shrimp is to free shrimp. Now if you really want to put meat on the table, or fill your deep freeze, this is it. Use a spinning rod and reel with 20-pound monofilament line with a No. 10 treble hook on the line. Hook a live shrimp through the horn and chunk him as far as you can. When the shrimp hits the water, give him line and let him swim where he wants to go.

Don't try to play him or retard his movements, just leave him out in the water until something gobbles him up; that usually doesn't take long. This kind of fishing should be against the law; it is too deadly. But I love it.

When live shrimp is not available, don't pass up dead shrimp. Frozen shrimp is usually available at all times on the Coast. You can peel the shrimp, split it in half length-wise and fish it with a popping cork or on the bottom. If you happen to run out of shrimp while fishing, cut the belly from a trout or red into small strips and use this for bait. Bottom fishing rigs are the same in salt water as the ones used in fresh water. The main difference is the type of sinkers. Pyramid sinkers weighing from 3 to 6 ounces are used in salt water because these sinkers will hold on a sand bottom where the round types will not hold.

Don't overlook piggy perch and mullet for bait. Squid is good bait, too, but it is hard to find. Sand crabs make fine bait, but I'm not fast enough to catch them; also try fiddler crabs. If you really want to have some fun, just ask your wife to bait your hook with a live squid or sand crab. This is more fun than fishing!

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Drama, Conflict and A Deer Hunter's Decision

FOR THE STILL DEER HUNTER who will look, nature puts on a varied and entertaining show.

Nature, however, was not putting on any show in the cold blackness of 5:45 a.m. Tuesday when Joe Ed Russell of Annona stopped his jeep at the edge of black woods. Nature was cold and asleep.

Like a mastodon returned to Red River County sounded my feet in the cold, crisp leaves until I finally reached a point on the ridge overlooking a little black valley and put my cold back up against a black column of a cold oak.

The columns and telephone poles turned into trees around 6 a.m. and down in the wooded vale below me there was a crooked, dull-silver thread of a brook. Brrr, it was cold, but I couldn't afford to move.

"Cawwww, cawwww, cawwww!" A quarter-mile to the north a crow spotted some late hunter and warned all the deer on Stiles Ranch.

The raucous alarmist came closer. Black wings stopped above me where the bird continued to gripe about people coming into his wood. There was a cawing to the south—more hunters—and both birds moved away, swearing.

The light grew timidly. Leaves rustled 20 feet in front of me. There was a hop, two, then little paws scattered cold leaves, a tail flipped up the back—a squirrel. The paws came up with an acorn as big as a golf ball—breakfast—made a quick, bird-like turn and circled up a tree.

The full light came. Then, to the right, 150-175 yards away, there was movement in the brush. Moments later a slim, gray head thrust out from behind a tree. A deer! No horns, a doe. Would her gallant lover be close behind? She moved slowly around a hill.

If that was the deer trail, it was necessary to move 100 feet to the right. How? A foot eased down, a long stop, more slow spaced steps like an animal feeding. After an eternity my cold back was against another big, cold tree with a branch just above my head, my breath white.

A flutter of wings landed on the

by KEN FOREE Winner, Associated Press Award



Ken Foree, Dallas News

branch not six feet from my head, a little gray bird with a crest. Titmouse. The crested head twisted and the bright eyes studied the strange growth on the tree with a black stick in its paws, then decided it was harmless and not so important as breakfast.

Cold minutes flowed like cold molasses. Then about a chilly 7 a.m. there was gray movement in the glade—deer.

Another doe, sleek and pretty. It stopped, looked over its shoulder, did a little two-step, flirted its tail, glanced backward. A deer flirt if there ever was one, who would say, "Well, I don't know . . ." if there was an attempt at a pickup, unless of course, dark, and handsome and had a Cadillac of a rack on his head.

Tall, dark, and handsome didn't show. Maybe it was that blonde, the hussy! Well, there were other bucks in the wood. So she trotted on, but occasionally glanced back.

About 7:12 there was a rustle almost in my ears. It said deer. It was impossible to keep my eyes from swiveling to the right. Not 15 feet away came a small doe, probably

this year's fawn.

It passed within 10 feet unalarmed. It reached the tree where I had been, jumped, then scuttled downhill, looking backward.

About 7:45 in the vale below appeared the twin sisters, sleek, gray, experienced and brazen cuties of the wood. They didn't merely glance backward, they turned and stared. Wouldn't old handsome ever come?

At 8:14 he did. Then the coquettes tripped away, playing hard to get.

On he came, a Clark Gable with an 8-point rack on his head that would dazzle any doe and his 150 muscled pounds behind it could rout any little punk trying to date his girls.

He came trotting behind the trees, his handsome head outstretched sniffing the Chanel No. 5 the cuties had left in the air behind them.

Ahead of him 150 feet, there was a two-foot-wide gap between two trees 125 yards downhill. It would be the best chance.

There was a mental conflict.

Wouldn't it put a man in a killing rage when out with his true love to be charged by a fool deer?

Or, was there another way to look at it—the handsome animal in full flower, buckhood at its peak, the rest a slide downhill, ills, doctor's bills, whippings by today's punks, a charitable bullet?

The lover neared the gap.

"Pull, fool, pull!" shouted something.

The roar shattered the silence. Birds twittered nervously. There were rushing feet, brush knocked down by rolling, then running buck. Then silence as the wood gasped.

It's not wise to crowd a wounded deer. So 15 minutes later when Russell returned with Jerry Roberts, Fort Worth insurance man, we went to cut the trail.

Roberts in 50 yards quickly spotted the lover, long since quiet. He had really lost his heart this time in pursuit of love and it was no consolation to him that also has many a man and that that day he had played the heavy in nature's hit parade.

Public Hunt Areas Adopted at SCOT Convention

by JAY VESSELS, SCOT

The annual convention of the Sportsmen's Clubs of Texas in Austin. January 16-17, was marked by adoption of a new self-financing program and by launching of SCOT's own shooting reserve chain designed to provide more hunting facilities. Both steps were taken in the term of President Hayden Head of Corpus Christi, who, at convention's close, was succeeded by John F. Lynch, 46, Houston oil man. The new revenue program will be jointly supported by a \$1 per capita membership fee for all affiliated clubs and by income from the first public hunting area.

In a rare display of harmony from start to finish, the convention hit its peak in assisting a few clubs which found themselves temporarily compromised by the added financial commitment. Affiliates with better fiscal status offered their cash aid to help with the transition.

The launching of the first of a contemplated series of public hunting areas centers around a 10,000-plus-acre ranch in Webb County, in deep South Texas, which will be operated for SCOT's benefit. Key factors in the new set-up, which is expected to accommodate between 50 and 100 big game hunters daily were:

Ted Scibienski, SCOT director, now elevated to vice-presidency, Corpus Christi oil man, and Val Lehmann, wildlife manager for King Ranch, who jointly purchased the ranch and then leased it to SCOT for \$1 a year for three years.

The Caesar Kleberg Foundation volunteered to surround the ranch with a deer-proof fence. The King Ranch offered to stand expense of stocking the hunting area with deer, javelina, and wild turkey to augment its already well-populated status.

Two principal speakers at the convention were Charles Callison, conservation director for the National Wildlife Foundation, and Brad Smith, Governor Price Daniel's safety director.

Seven new plaques were an-



John F. Lynch left, of Houston, succeeds Hayden Head of Corpus Caristi as president of SCOT.

nounced to be awarded to the latest veteran employees to retire from the Game and Fish Commission. This custom was inaugurated by SCOT with the personal participation of Governor Daniel in the initial award. Those honored at the convention were: Hatchery Superintendent Bob Winn and Game Wardens Jess Felts, George B. Killebrew, John C. Manning, Charles F. Ray, Ferrell E. Holloman, and the late John T. Taylor, also a game warden.

The complete slate of new SCOT officers is: President, John F. Lynch, Houston; Past President, Hayden Head, Corpus Christi; Vice Presidents, Herb Klien, Dallas; Ted Scibienski, Corpus Christi; John R. Suman Houston; Charles Schreiner III, Kerrville; Treasurer, David Read, Silsbee; and Secretary, Ken Foree, Dallas (re-elected).

Members of the Board of Directors are Lawrence Hagy, Amarillo; Don Maxwell, Odessa; F. Kirk Johnson, Jr., Midland; E. M. Newman, Bayshore; John Kubeno, Fayette; Marshall Clarke, Abilene; James Cullum, Wichita Falls; Toddie Lee Wynn, Jr., Dallas; Bob Leonard, Fort Worth; Bill Nagley, San Antonio; R. S. Guinn, Austin; S. L. Craft, Palestine; P. M. Johnston, Waco; Bruce Wiggins, Beaumont; W. B. Wood, Jr., Port Arthur; Har-

vey Weil, Corpus Christi, and Lawrence Wood, Refugio.

Stamp Recognizes Need For Duck Retriever Dogs

A Labrador retriever carrying a mallard drake is the winning design for the 1959-60 Migratory Bird Hunting Stamp, the Wildlife Management Institute at Washington, D. C., reports.

The new stamp establishes a number of "firsts." It is the first time that the stamp has featured a retrieving dog. It points up the need for more hunters to use properly trained dogs to reduce the crippling loss of ducks and geese. This loss presently amounts to 25 per cent of the annual bag.

A second "first" is that the new stamp will be the initial issue under a law enacted last year to raise the fee to \$3 in order that the increased revenues can be used to launch an accelerated program for the purchase of wetlands of value to ducks and geese for feeding, resting, and nesting purposes.

Finally, the judges' selection sets a new record for the number of times one artist has won the annual competition. Maynard Reece of Des Moines, Iowa, is the first three-time winner in the history of the contest.

Summary Shows Average Kills Low on Public Hunts

A total of 1,112 hunters who reported for the public hunts on the Game and Fish Commission's wild-life management areas downed only

351 deer this past season. Of these deer, 176 were bucks and 175 antlerless.

Best kill of the season was report-

ed on the Kerr Wildlife Management Area, where there was a 59.70 per cent kill by 201 hunters who bagged 120 deer.

SUMMARY 1958 PUBLIC DEER HUNTS

		Permits Hunters Applicants Issued Reporting	Huntors	Number of Days	Desired	KILL					
Name of Area	Applicants				Kill	Antlered	Antlerless	Other	Per Cent Success		
Black Gap	3,437	401	313	2	2	313 2	200	63	70	24	42.49
						1:	33	javelina			
Kerr	4,394	250	201	2	183	52	68		59.70		
						1:	20				
Engeling	2,956	241	209	1	100	28	27		26.31		
							55				
Sierra Diablo	504	80 66	80 66	66	2	40	23	10		50.00	
								33			
Angelina	1,566	551	323	1	110	10			3.09		
							10				
TOTAL	12,857	1,523	1,112		663	176	175	24	31.56		
							3	51	javelina		





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No Luck With Ducks on Big Hill Bayou

Sportsmen on the newly acquired Big Hill Bayou Wildlife Management Area near Port Arthur had very little luck during the public hunts for ducks held three times a week November 1-25.

Number of Permits Available	Hunters	Kill	Man-hours Spent Hunting	Ducks Reported Crippled
1,400	516	452	1,728 3.3 man-hours per hunter	131

Weather Hinders Hunters on Howe Area

Few hunters braved the adverse weather conditions on the Gene Howe Management Area in the Pan-

handle to get their quail. On the last two hunts the weather was zero degrees or below with gusty winds.

Applicants Permits Issued		Hunters Reporting	Kill	Man-hours Spent Hunting	Quail Reported Crippled	
504	80	44	234 5.3 birds per hunter	230 5.2 man-hours per hunter	37	

ter pilot would have no trouble in determining where he was to spray. Previously, the area and volume of water in each of these sections had been calculated. Thus the exact amount of liquid rotenone dosage for each section was known. The lake and the river were to be treated with a 21/2 per cent synergized liquid rotenone at the rate of 0.12 parts per million.

On December 16, 1958, about 10 a.m. the work began. The weather was very cold. Ice covering some of the small coves had prevented an earlier start. Water temperatures in parts of the lake were as low as 38° F.

Chemical was carefully metered and loaded into the helicopter and boats and by middle afternoon, some 738 surface acres of the lake and the 4½ miles of river above the lake had been treated.

Because of the low water temperatures, it was expected that the fish would be affected very slowly. It was also expected that the kill would go on for several days.

It was soon obvious that the fish in the river, treated by boat, were much more quickly affected than those in the lake. Shad started to become sick and began dying within a few hours after the boats completed their work.

Netting checks of the lake showed that large numbers of shad were not killed by the treatment of the lake. In the river, on the other hand, carp, buffalo, and a few catfish were destroyed in addition to shad.

Even though the helicopter pilot did an excellent job in applying the chemical evenly over the lake, the boats proved they could do a surer, more effective job.

Although not enough gizzard shad were destroyed in the overall treatment of the lake and river, reports from persons living in the Mexia area show that crappie fishing is better than it has been in many years.

The manager of the Fort Parker State Park says fishermen are catching limit strings of crappie from the lake. These strings of 25 fish each have been averaging from 23 to 24 pounds, which means an average weight of the individual fish of a little under a pound each. Fish of this size had been rarely seen in recent years.

One man from Mexia reports that he started out from home to go fishing at the lake at 3 a.m. and hoped to find a good place at the dam of the lake. When he got there he could barely find room enough to sit down. The people of the area have been fishing the lake hard ever since December 23 when the crappie began to bite. They have been there in large numbers even through some of the coldest weather.

Plans for the future of this lake are to re-treat it by boat in the not too distant future, probably in late fall when water temperatures are warmer than they were at the time it was treated this past year. It is believed that the next time it is treated a much better job can be done.

Further experimentation with the selective kill technique for reclaiming poor fishing lakes will be carried on. For example, work is now being done in the experimental control of bullhead catfish in the more acid waters of the eastern part of Texas. When more is learned, it is believed that bullheads, or "poliwog" catfish, will also come under the control of our fishery biologists. The ultimate the Commission biologists hope for will be techniques with which each individual species in lakes and streams can be selectively controlled.

Rose bush fences grow thick.

Ransom for Quail _

Continued from page 14

Fish Commission has been distributing free plants in an effort to get demonstration plantings established. This, we hoped, would get the plant introduced around the State.

Missouri has had considerable success distributing multiflora rose plants. The farmers who planted them were eligible for ASC payments and this approval doubtless encouraged the practice. Many farmers want multiflora for fencing, as well as for cover for birds. Once established, although it may take four years as in Newton County, a good hedge will turn all kinds of livestock. The rose stems are so thorny that not even a dog can pass.

Success in Texas with multiflora rose has varied with the effort of the planter. Thorough cultivation the first year seems essential. On most soils, heavy fertilization every year is desirable.

Some disadvantages of multiflora rose are: it won't grow well on wet sites, in shade, or in areas with less than about 35 inches of annual rainfall. Also it needs protection from livestock the first two years.

Spreading of the rose is a possible hazard. Birds love the berries and

this spreads the seed. Occasional plants will develop under places birds perch. In cultivated land or mowed pastures this is no problem. Elsewhere it can be controlled with fire or with herbicides. Multiflora rose appears to be much less prone to spread than Cherokee or McDartney roses.

Anyone who wants to try growing multiflora roses may be able to get some free plants from this Department next fall. The requirements are that the recipient live in an area where the roses will grow, that he pay the freight charges on the plants, and that he agree to plant and cultivate them according to directions. Those who wish to apply may write E. A. Walker, Director, Division of Wildlife Restoration, about next September.

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FRANK WIED

REALITOS, TEXAS

Fire Ant Program Heads List For Discussion at Convention

Problems resulting from the application of chemical pesticide poisons will be discussed by a panel to highlight the opening day of the 23rd annual convention of the National Wildlife Federation this month. The convention will be held in New York February 26-March 1 at the Sharaton-McAlpin Hotel.

Dr. Clarence Cottam will serve as moderator for the pesticide panel. Cottam, director of the Welder Wildlife Foundation at Sinton, formerly served as assistant director of the U. S. Fish and Wildlife Service. He is chairman of the newly-created pesticide committee of the International Association of Game, Fish, and Conservation Commissioners.

The panel will touch on all phases of insect and plant pest chemical controls, but much discussion probably will be directed toward the controversial fire ant program in the South.

Colorful Wildlife Stamps Enter Mails

Wildlife Conservation Stamps for 1959 now are going into the mails for distribution all over the continent to people interested in nature, the National Wildlife Federation announces. The colorful stamps depict 35 species of birds, mammals, fish, plants, and one reptile. Scenes on the stamps are painted from real-life settings and are suitable for use as mounted decorations and in album collections as well as upon correspondence.

The artwork was prepared under the direction of Roger Tory Peterson, one of the world's best known wildlife artists and author of the famous "Field Guide to the Birds." Other artists contributing to the 1959 stamps include Carl Burger, Al Kreml, Don Eckleberry, Bob Hines, Maynard Reece, and Michael Bevans.

The 1959 stamps reproduce natural color paintings of the following subjects:

Birds: Parasitic jaeger, goldencrowned kinglet, robin, black-capped chickadee, broad-winged hawk, Baltimore oriole, wood ibis, barn swallow, Bewick's wren, laughing gull, ruffed grouse, brant, and western kingbird.

Mammals: White-tailed deer, moose, longtail weasel, bobcat, bannertail kangaroo rat, red fox, thirteen-lined ground squirrel, and coati.

Fishes: Yellowfin tuna, bonefish, black bullhead, yellow grouper, vermilion rockfish, and rainbow trout.

Plants: Spatterdock, rose-mallow, white trillium, dog-faced sulphur, black-eyed susan, Joshua tree, white adder's tongue, and purple coneflower.

Reptile: milk snake.

Contributions received in exchange for the stamps help finance the educational programs and conservation projects of the Federation, the largest conservation organization in the nation.

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Writers Elect Officers

Outdoors writers of Texas went into a permanent organization at a January meeting of the group in Austin.

Officers elected were George Kellam, Fort Worth Star-Telegram, president; Roy Swann, Corpus Christi Caller-Times, first vice president; Ken Foree, Dallas News, second vice president; L. A. Wilke, Texas Game and Fish magazine, Austin, secretary-treasurer.

The directors named were Vern Sanford, Texas Press Association, Austin; Grady Hill, Standard Times, San Angelo; Earl Golding, Waco Times-Herald; John Clift, Denison Herald; Andy Anderson, Fort Worth Press, and Harv Boughton, Houston Post.

Russell Tinsley, Austin American-Statesman, was named liaison member with the Outdoors Writers Association of America.

The Austin meeting was held after the January session of the Game and Fish Commission. Several members of the Commission were guests at the writers' meeting.



PINE SEED_INGS are presented by Clyde Thompson, Texas Forestry Association presiden-, left, to two representatives of the Dibol Future Farmers of America. Looking on is Bobby G. McCurry, advisor and instructor of vocational agriculture for the Diboll FFA. The presentation was part of a program in which one-half million free pine seedlings will be distributed by the Texas Forestry Association to encourage tree planting and other desirable forestry practices. More than half of the seedlings have been conated by the Southwestern Sattlement and Development Division of East Texas Fulp and Paper Company. The rest have been purchased by the Association from the Texas Forestry Service.

Nature Plays Strange Tricks

Nature plays strange tricks on her children.

Denton County stands second to none on variety of misfires and malfunctions in nature. Among oddities noted in the county during the past few months was a lizard with two tails found by a Lewisville student.

W. F. Meeker of Denton trapped a nutria, where there have been no nutria. This writer has a mourning dove with snow white feathers, yet with normal colored eyes and legs. Garza-Little Elm Lake produced a deformed catfish, a channel cat with another smaller catfish grown under the skin. The fish had a small open-

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ing in its side through which the passenger-fish was getting a supply of oxygen and food.

Wardens Stein and Gerganess on patrol in this county found a snowwhite opossum, an albino, with pink feet and lips.

One Der ton citizen got his picture ir the paper with a lynx cat, where only bobcat are thought to roam, and another with a copperhead that measured over three feet in length. _V. P. Long

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It Happened This Way

One violator who was recently corraled does not believe in doing things by halves. The warden who arrested him did so after watching and following him for 30 minutes. In the first place, the man stopped his car in the road and shot a dove from a wire. Violation. The time was 9:30 a.m.—another violation. He drove a few feet and did it again. Violation.

He then tried to hide his car, and crawled over a fence into a posted game reserve — trespass violation. He was shooting at more doves when the warden arrested him-more violations. As you might guess, his auto shotgun was unplugged. Violation.

AND — who would have ever thought-he was from out of the county and didn't have a hunting license.

He violated every law there is concerning doves except over limit, and admitted that he was a poor shot or he would have been guilty of that too.

In one Texas department store this year three quail walked in one day, looked around, and finally wound up in the children's dressing room. Finally they were caught and released outside.



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THE GARDEN OF CHAPARRAL by Elizabeth M. Reiss. 158 pages. Generously illustrated with black and white sketches by the author. Published 1958 by Vantage Press, Inc., 120 West 31st St., New York 1, New York, \$3.

An artist turned author that she might share the wonders of the Rio Grande Valley—her Garden of Chaparral—with all others.

At first she gathered flowers and leaves of these Texas plants to paint. She found so many, however, with unusual names and habits, she turned her attention for nearly 40 years to studying them. The book is filled with detailed information about all the plant life along the lower Texas border. One by one, Mrs. Riess has catalogued and described them.

She tells how the names of many of these plants were derived from the Nahuatl Indians, and spelled as Spanish ears heard them.

Perhaps no one of the plants is better known in the Valley than the Palm which she describes in detail. She goes back into history to show the palm was first cited on both sides of the Rio Grande as early as 1502, barely 10 years after Columbus discovered the New World.

Her treatment of the cactus and the milkweed is equally systematic. The lowly mesquite, which covers thousands of acres of the brush country, the willows along the banks of the river, and the little hot peppers Mexican people like so well. They are all covered in this book. It is a source of ready information for those who are interested in Texas border plant life.—L. A. Wilke

POCKET FIELD GUIDE TO ANIMAL TRACKS. 64 pages, including pages for field notes and the index. Published in 1958 by The Stackpole Co., Telegraph Press Building, Harrisburg, Pennsylvania. \$1.50.

Tracking is one of the oldest forms of hunting. Down through the years since man first learned to eat meat, tracking has been important in pursuit.

Here is a little handbook which provides characteristics and identification of numerous North American large and small game animals. It is just the thing for young and old, whether you are stalking meat for the pot, or just following the animal for the fun of it.

In small game there are plates which show the tracks of rabbits, squirrels, wolves and many others. There are also plates which point out characteristics of these animals, so you can recognize them from the signs they leave.

There also is a section on big game. If you want to know what a white-tailed deer looks like, or how it compares with a mule deer, you can find it in this handbook. There are also plenty of blank pages in the back of the book, where you can write your own field notes. With this book you can learn a new appreciation of tracking animals. It is well worth having.

—L. A. Wilke

ON YOUR OWN IN THE WILDER-NESS, by Townsend Whelen and Bradford Angier. 324 pages, illustrated with photographs by the authors and sketches by Vena Angier. Published in 1958 by The Stackpole Company, Telegraph Press Building, Harrisburg, Pennsylvania. \$5.

Beginning with the foreword of ON YOUR OWN IN THE WILDERNESS, you are lifted from the crowds and noises of city life into the beauty and solitude of life high in the mountainous wilds of some distant land. But even amidst this charm of nature there are dangers. And, as the authors point out, you may find that you haven't brought along the proper equipment and knowledge to live in the wilderness safely and pleasantly.

As you explore the heart of this book, you become more and more educated in the ways of living in the out-of-doors. Jam-packed with helpful information concerning travel in the wilderness, this manual offers a pinch of everything from maps and maping to tips for women in the woods.

Whelen and Angier, two old veterans of the bush life, have compiled in this manual many of the hundreds of tricks they have learned, sometimes the hard way. If it's more facts about camping without a tent you wish to know, it's there, along with tools for the outdoorsman, procedures for taking care of yourself while in the wilderness, and basic outdoor cooking aids.

Each chapter is filled with a variety of subtopics, wisely chosen according to importance. Blended in with facts and figures are touches of descriptive writing.

Toward the end of ON YOUR OWN IN THE WILDERNESS you will find an appendix listing many of the favorite cooking terms used by outdoorsmen, ingredients that can be used in place of others, various measurements, weights, and a provision table.

For all who wish to journey into the wildest brushland, live there safely and comfortably and return home well and satisfied, ON YOUR OWN IN THE WILDERNESS is a guide to keep close at hand.

—Curtis Carpenter.

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Junior Sportsmen

Wildlife Looks To You

For Help

LETTER OF THE MONTH

(The Agua Dulce Boys 4-H Club decided to release quail as their community project some time back. Their work and success are discussed here in brief.—Ed.)

Before the project was begin. J. L. McDougald and Fred Lambert, local representatives of the Game Commission, were invited to talk over the good and bad points of such a project. The plan was approved, and everyone within the boundary limits of the project were contacted. Community projects are fun because everyone has a chance to participate.

A survey was made on each farm to determine the number of birds it should have for release and proper stocking. Posted signs were placed on 8,475 acres of land. These signs, made by the 4-H boys, read, "This Farm is a part of the Agua Dulce Boys 4-H Club Wildlife Demonstration — No Hunting Please." Sixty-three were made for distribution.

Brush piles were added where more protection was needed. Farmers who had no brush cut and hauled it from neighboring farms. Last summer, 430 birds were purchased and released. From that time on youngsters have reported often on their birds. Even the adults have kept close track of the birds.

In a land of row crops, a weedy fence row, and an occasional jack rabbit, the quail have certainly added a welcome attraction. Our thanks to you.

> Neil W. Wright Boys 4-H Adult Leader.

Wildlife Quiz

I am a small animal that is said to "fly." My soft and silky fur is brown on the back side, white on the underside and part of my face. I have large eyes. I do not really fly, but glide by extending my limbs and using the loose membrane between my hind legs and my fore legs to support my "flight." What is my name?

Answer:

Flying Squirrel.

Watch a Frog Develop—Project for February

When the winter chill has lessened enough to take a field trip, find a clear glass bowl, and head for the nearest pond or lake. Look in the shallow water for a cluster of jelly-like balls with tiny black specks in them. These clusters are frog eggs.

Fill your bowl with water and take a few of the eggs home to watch. From 5 to 20 days after the eggs were laid, they will hatch and tadpoles will emerge.

Notice the gills on the outside of each tad's head. The gills absorb oxygen from the water and put it directly into the bloodstream. Put some algae in the bowl for the tads to eat. The tads now are vegetarian.

As time goes by, you will see two bud-like sacs grow at the base of the tad's long swimming tail. These buds change slowly into hind legs. Soon after the hind legs appear, the front legs develop. The swimming tail will get smaller and smaller until it is gone.

While these outer changes are taking place, the tad shows more and more a need for air above the surrace of the water. Its gills are disappearing be-

cause it is developing sac-like lungs inside its body. Finally you have a frog.

The frog is carnivorous and feeds on insects, worms, small fish, crayfish, and small birds and mammals. It needs large amounts of water, and it absorbs this moisture through its skin. The frog will grow ever fatter through the summer in preparation for its long hibernation next winter.

WORDS YOU SHOULD KNOW

Algae-Pond scum in fresh water.

Absorb-Suck up, as does a sponge.

Hibernate—Sleep through the winter. Carnivorous—Eating flesh, preying or

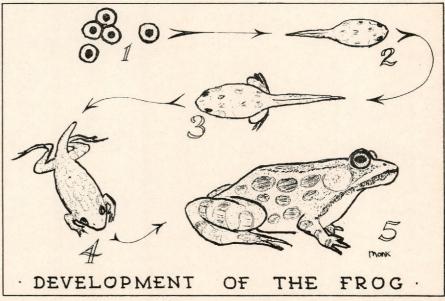
Carmivorous—Eating flesh, preying or feeding on animals.

Vegetarian—Eating only plant life.

Environment-Surroundings.

Tadpole—An aquatic, water breathing, immature or larval amphibian with gills and a long tail.

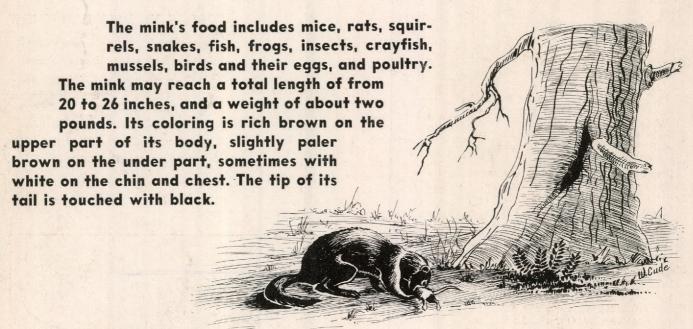
Aquatic—Living or performing in water.





MINK

The mink, famous for its long, beautiful fur, lives in the bottomlands of rivers and streams in the eastern half of Texas. Its favorite habitat is near log jams, thickets, hollow trees, root tangles, and burrows. It dens in slightly elevated mounds, preferably in coastal areas. A single litter of four to six young is born in April or May, and the young remain with the mother until they are nearly grown.



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