

## DEVELOPMENT AND SUCCESS OF CATCH-AND-RELEASE ANGLING PROGRAMS

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### Introduction.

Angling is a traditional national pastime. Fishes upon which this recreational activity depends constitute a highly prized natural asset, a resource too valuable to be wasted. The Fishing-For-Fun concept is encouraging greater numbers of anglers to enjoy the sport by releasing many fish they catch. Without diminishing the basic resource, such programs expand recreational opportunities.

A trout is too highly prized to be caught only once (Miller, 1958). By the time a hatchery trout reaches an angler's creel, frequently, its worth exceeds that of a golf ball which a golfer uses over and over (Grove, 1961). Additional recreational enjoyment can be realized by catching and recatching an individual fish more than once!

A basic difference exists between the fisherman and the hunter. In angling, the question of killing is nearly always optional, Knight (1939) observed.

He remarked that ". . . a fish hooked with a fly and played to the net is usually not materially hurt and may be returned again to the water slightly weary but otherwise as good as ever to be caught again next year . . . the idea of not killing many fish causes an angler to become intent on a fish not on a number of fish!"

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As a matter of personal pride and satisfaction, many individual fly fishermen turn back the majority of trout they catch. This has been a common practice among a selected few for decades. Official recognition of the catch-and-release philosophy is reflected in current fresh-water programs established in several states. In these programs that encourage the "kill-less-but-catch-more" concept, regulations restrict methods for taking trout and reduce the numbers of fish which may be retained.

The catch-and-release of marine game fishes, likewise, has found wide acceptance. Prized marine species such as sailfish, tarpon and bonefish received initial attention in catch-and-release programs in salt water. The idea has expanded in recent years to include other important fishes. These programs are managed on a voluntary basis rather than upon stated laws. Favorable public sentiment and special recognition in tournaments and the feeling of sportsmanship are the incentives which support these salt water programs.

#### Development of Fishing-For-Fun Concept.

Back in 1906, William B. Mershon, the famed Saginaw sportsman, noted that in a single day he and a companion caught and returned 400 trout on the North Branch of the Au Sable River (Petersen, 1956). At his urging, in 1907, the Michigan Legislature passed a fly-fishing-only bill for the protection of the trout populations of the Au Sable River and for the perpetuation of the sport of angling. This was an experiment unique in this country over 50 years ago! (Petersen, 1956; Cooper, 1951; Titus, 1960).

Beck (1938) advocated lower daily creel limits and the use of artificial flies as measures to reduce the kill of trout. His admiration was expressed not for the man with the overloaded creel but for the angler who released all the fish beyond his reasonable requirements.

Hazzard (1943) determined in 1943 that the trend in all progressive trout states was directed toward lower kill limits. This movement, he reported, placed emphasis upon the recreational importance of trout rather than upon the value of meat.

Two years later, Hazzard (1945b) wrote: "The only hope for improving trout fishing is by restricting the kill on waters which are now overfished . . . if the trout fisherman wants such exceptional fishing at reasonable cost he can have it if he is willing to release most of the trout he catches after he has had the fun of deceiving and landing them." The kill must be limited to the capacity of the waters to produce satisfactory fishing (Hazzard, 1945a; Trueblood, 1951).

Within a short time, Michigan established a number of sections of streams upon which angling was restricted to flies and where the catch limits were low. On these waters, an angler was permitted to catch all the trout he wanted but he was allowed to kill only a few.

The Fishing-For-Fun concept continued to develop. In 1949 the Pennsylvania Fish Commission adopted the motto, "Kill Less--Catch More!" It was reworded in 1952 to read "To Catch More, Kill Less!" In its revised form, it is still in use.

Hazzard proposed in 1952 that angling on the more heavily fished waters can be improved by making it illegal to have trout in possession at any time. This proposition sparked the initiation of a no-kill Fishing-For-Fun program in Great Smoky Mountains National Park, Tennessee-North Carolina, in 1954.

Various types of programs have developed under the Fishing-For-Fun or catch-more, kill-less concept. Under a no-kill Fishing-For-Fun plan, all fish caught are released by regulation or voluntary action. Under special regulation Fishing-For-Fun plans, smaller creel limits, larger minimum length limits, fly-fishing-only, and artificial-lures-only rules prevail. The encouragement of angling for recreation within the carrying capacities of the waters and the return of all or a portion of an angler's catch are features these plans share in common. Reduced emphasis is placed upon the kill.

A variety of names have been applied to these programs. Included among these are the following: Fishing-For-Fun, Fish-For-Fun, the Hazzard Plan, fly-fishing-only, quality fishing, catch-and-release, put 'em back alive, no-kill-trophy-fishing and special regulation programs.

Application of the Fishing-For-Fun concept has been directed in fresh-waters primarily toward trout and salmon (Grahame, 1959; Fox, 1961). Warm water species such as pickerel, pike and largemouth bass receive consideration in situations where the potential of the existing fish populations to withstand heavy fishing pressures is limited.

As a practical management measure, the wholesale application of Fishing-For-Fun to all species of fishes and to all waters is not advocated. In waters which contain crowded populations of sport species, for example, the application of this principle could prove to be detrimental. On selected waters, this plan can enhance recreational opportunities to fish for wild trout without depleting the basic resource.

The matter of questions which arise from the establishment of Fishing-For-Fun programs is discussed in Appendix A; some guidelines for the conduct of such programs are outlined in Appendix B.

Some programs for Fishing-For-Fun rely upon wild populations of trout which have resulted from natural reproduction or have been created by the stocking of hatchery trout fingerlings. Other programs depend upon the stocking of larger sized fish.

#### Programs Operate in 17 States.

Fresh waters in 17 states and several Canadian providences are managed under special Fishing-For-Fun type regulations. These rules prescribe that trout or salmon may be taken only with artificial flies or lures, provide for reduced daily kill limits, or allow only the larger fish to be retained. Some require the use of barbless hooks.

These states include: Alaska, Colorado, Maine, Maryland, Michigan, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Tennessee, Vermont, Virginia, Washington, and Wisconsin. (A state-by-state review is included as Appendix C.)

No-Kill Fishing-For-Fun Plans. Fishing-For-Fun plans which require the return of all trout have been established on specific streams in Pennsylvania, New York and Virginia.

On the Left Branch of Young Woman's Creek in Pennsylvania the Fishing-For-Fun program has operated since 1958. It requires the use of flies only and the return of all trout. (Miller, 1958; Forbes, 1958; Titus, 1959; Grahame, 1959; Reinhold, 1959, 1960; Lucas, 1960; Vaughn, 1960; Grove, 1961).

The National Park Service and Virginia in 1961 initiated a cooperative Fishing-For-Fun on the Rapidan and Staunton Rivers. Regulations on these waters provide for the use of artificial lures only and the return of all trout. (Shomon, 1961; Sheridan, 1961; Birchfield, 1961; Anon., 1961a, 1961b, 1961c; Wallis, 1961a, 1961b).

Legislative action in 1961 designated a 1.44 mile section of the famed Schoharie Creek in the Town of Lexington in New York as a Fishing-For-Fun water. Anglers will be limited to the use of one lure and will be required to return all fish caught in the streams during the period of the experiment which extends from 1962 to September 3, 1965.

Special Regulation Fishing-For-Fun Plans. Fishing-For-Fun plans which operate under special regulations that permit low catch limits or longer minimum length limits have been established in Colorado, Michigan, Pennsylvania and Washington.

A pioneer application of special regulations on specific waters was made in Pennsylvania in 1934 with the establishment of the Springs Creek Project, now known as "Fishermen's Paradise" (French, 1939). Originally this project was planned as a demonstration of stream improvement. It evolved into a program which allowed the angler to use flies and barbless hooks, and permitted him to catch 10 fish in any one day but provided that he could keep no more than two fish. The trout, stocked in large numbers, were fed in the stream. The intent was to provide fishermen with a spot to improve their skill.

A limit of one fish per day now prevails at "Fishermen's Paradise." The stream continues to receive heavy plantings of larger sized hatchery trout. Now the project affords highly competitive fishing. Anglers vie to see how large a fish each can land under extremely artificial conditions. As such the current program has deviated from its original objective.

From this germ of an idea, Michigan began a program of special regulation trout ponds in 1943. On these waters the daily creel limit was established at two fish per day and the minimum size of fish which could be kept was eight inches. This program still continues in an expanded form. Many anglers fish in these ponds solely for recreation and return all of the trout they catch except for an exceptionally fine specimen (Hazzard, 1947; Hazzard and Fukano, 1948; Westerman, 1949; Cooper, 1954).

Colorado opened Parvin and Butte Lakes in 1960 to "quality fishing" under regulations which require the use of artificial lures or flies and the return of all fish under 14 inches (Tanner, 1961; Seaman, 1961; Williams, 1961).

Six lakes in Washington, set aside for experimental purposes in 1961, are managed as restricted fishing lakes. On these waters, the daily catch limit is three fish. The angler release trout under 12 inches but must keep fish which measure over 12 inches. The purposes of the Colorado and Washington programs are to improve the quality of angling and to provide for a sustained fishery for larger sized trout.

#### National Park Service Activities.

The National Park Service policy places primary reliance for recreational fresh-water angling upon the wild populations of fishes. Where conditions of natural reproduction are insufficient to provide suitable recreational enjoyment, supplementary hatchery trout may be planted to supplement wild stocks (Wallis, 1960.)

The development and operation of programs which implement this policy are encouraged. Reduction of creel limits, and the increase in length limits and the establishment fly-fishing-only and Fishing-For-Fun programs are measures currently employed in some National Parks. They are aimed at achieving this objective and at perpetuating recreational angling, a traditional and significant use of a natural resource within areas administered by the National Park Service. Angling for wild and colorful trout amid some of the nation's cherished scenic wilderness landscapes is thus developed.

Great Smoky Mountains National Park. Regulations permit the use of artificial lures or flies only in Great Smoky Mountains National Park, Tennessee-North Carolina and in Shenandoah National Park, Virginia. Fly-fishing-only regulations restrictions prevail on selected waters in Yellowstone, Mount Rainier, and Acadia National Parks, Blue Ridge Parkway and Katmai National Monument.

A Fishing-For-Fun program, initiated in Great Smoky Mountains National Park in 1954, under a cooperative research project conducted by the U. S. Fish and Wildlife Service, has been the subject of considerable nationwide recognition (Thompson, 1958; Forbes, 1958; Titus, 1959; Grahame, 1959; Gould, 1960; Reinhold, 1959; Davis, 1960; Titus, 1960; Wallis, 1960, 1961a, 1961b; Cochran, 1960; Lennon and Parker, 1960; Anon. 1960a, 1961a, 1961b). It pioneered in this field of management of recreational fishing.

Fishermen were allowed to fish on two streams with artificial lures and to catch all the trout their skill and experience would permit but the plan called for the return of all fish caught. These waters were the West Prong of the Little Pigeon River, Tennessee, and the Bradley Fork, North Carolina.

The plan, a pioneer in the field of recreational fishing, was formulated upon Hazzard's premise (Lennon and Parker, 1960) that sport fishing for wild trout can be preserved, improved in quality and made available to increasing numbers of anglers by prohibiting the kill of trout.

After the program had met with success and public acceptance, far-sighted park officials extended and modified the plan in 1958. The two Fishing-For-Fun streams were opened on an all-year-around basis and it became legal to retain trout measuring over 16 inches. Sections of two additional streams, Little River in Tennessee and Oconalufee River, North Carolina, were placed on a modified Fishing-For-Fun plan. During the winter season, September 1 to May 15, the two were managed under the Fishing-For-Fun rules and with general park regulations during the regular fishing season.

Between 1954 and 1960, Lennon and Parker (1960) determined that under the Fishing-For-Fun plan the angler's individual catch per unit of effort and the quality of fish improved, public approval was achieved, and the wild trout populations increased. The average number of trout caught and released totaled more than six fish per hour, which greatly exceeded the catch experienced on streams where trout could be kept.

Yellowstone National Park. On Yellowstone Lake, the catch of the fame native cutthroat trout has expanded with the increasing numbers of fishermen. The total annual catch currently approaches the maximum number of trout the populations can safely provide in a single year without damaging the basic stocks. More than 7,500 trout was discarded in trash cans at the Fishing Bridge Campground during July 1959, although an angler's catch is limited to three fish per day.

Faced with this dramatic situation, park officials initiated a program of voluntary Fishing-For-Fun in 1960 to encourage park anglers to fish for sport and to release all fish not intended for camp use (Anon., 1960b, 1961b, 1961c; Clark, 1961; Wallis, 1961a, 1961b). As the plan finished its second year, public acceptance has been achieved, although final evaluation of this application of Fishing-For-Fun on a voluntary basis has not been completed.

Shenandoah National Park. The Rapidan and Staunton Rivers in Shenandoah National Park were placed on a Fishing-For-Fun plan with artificial-lures-only and no-kill restrictions early in 1961 (Shomon, 1961; Sheridan, 1961; Birchfield, 1961; Wallis, 1961a, 1961b; Anon. 1961a, 1961b, 1961c). The program has received general public endorsement. It is anticipated that other park streams may be included under a similar program in the future

Yosemite National Park. In Yosemite National Park, California, a three-mile, roadside stretch of the Dana Fork of the Tuolumne River was opened to Fishing-For-Fun in 1961 with artificial-flies-only and no-kill rules. This experimental program is scheduled to run for three years.



Consideration is being directed to proposals to establish Fishing-For-Fun plans on selected waters in Rocky Mountain National Park, Colorado; Olympic National Park, Washington; Lassen Volcanic National Park, California; and other parks.

#### Private Fishing-For-Fun.

The Fishing-For-Fun concept is not restricted exclusively to public waters. In Pennsylvania, anglers pay only for the fish they catch and retain at privately operated fee-fishing pond establishments which number more than 200. Many of these waters are stocked with warm water fishes but others are planted with trout.

Five trout pond establishments contain waters which operate on a Fishing-For-Fun basis and on which the return of the catch is fostered. Anglers pay solely for the opportunity to fish but are required to use artificial flies. Rules on some ponds permit the retention of trout but an additional fee is charged for each trout killed (Grahame, 1959). Fishing-For-Fun for trout on a commercial basis has proven to be an acceptable and economically successful operation.

Many private fishing clubs operate, as they have for years, upon the Fishing-For-Fun concept with no-kill rules and other highly restrictive limits. Seven private clubs that own or lease waters in three eastern states and operate expressly for fishing completed questionnaires mailed to them. Each report that catch-and-release is encouraged. Five have specific rules requiring the use of artificial flies or lures exclusively and reduced bag limits. Two clubs maintain no-kill regulations on principle warm water sport species. On private waters, in general, restrictive sport fishing pre-dates the adoption by state agencies of such measures for public waters. A number of clubs have possessed fly-fishing-only rules since the start of the century.

## Catch-and-Release of Marine Fishes.

Program for the release of marine sport fishes have operated for many years along the Atlantic seaboard. Tons of fishes, discarded to waste on the docks, directed thoughtful and imaginative marine fishermen to initiate catch-and-release programs for the purpose of encouraging the conservation of recreationally important fishes by reducing the kill.

The formation of the Stuart Sailfish Club, Stuart, Florida, in 1941 fostered the release of all sailfish not intended for mounting. Annually, the club presents special pins to anglers in recognition for the number of fishes released, as well as, buttons and pins for sailfish retained. The pins awarded each year for the release of fish outnumber those presented for fishes kept by a ratio of 10 to 1.

Nearly all of the sailfish taken in Stuart's Annual Light Tackle Sailfish Tournament are released. During the past five years, an average of 100 sailfish have been released during each contest while only a few are retained.

The philosophy has developed in the Stuart area that it is a greater honor to catch and release a sailfish than it is to keep one. Without a definite campaign, the concept of catch-and-release has spread to other species of marine fishes.

To launch a campaign for the conservation of the sailfish was the objective of the formation of the Sailfish Conservation Club of Palm Beaches, Florida, in 1949, in cooperation with the West Palm Beach Fishing Club. Since the project was initiated, certificates of sportsmanship and memento trophies have been awarded to over 6,000 anglers who have released more than 12,000 sailfish off the Palm Beaches.

The tagging of sailfish before they are released started in January 1960, under a program conducted in cooperation with Woods Hole Oceanographic Institute. Since the project was initiated, 800 sailfish have been caught, tagged, and released.

To be currently eligible for the memento trophy, the angler must see his fish tagged before it is freed. Four tournament points are given in the annual Silver Sailfish Derby for the release of sailfish and for each fish tagged, an additional point is awarded.

The application of the catch-and-release philosophy is now firmly established and widely accepted in the Palm Beaches area. Currently, over 80 per cent of the sailfish caught off these ports are released alive. Of the fish entered in recent derbies, between 85 and 89 per cent were freed.

A program initiated in 1954, for the release of sailfish, bonefish, and tarpon in the Metropolitan Miami Fishing Tournament has expanded to incorporate the return of 33 additional species. In the 26th Annual Tournament, December 18, 1960 to April 6, 1961, sportsmanship awards, in the form of colored plaques, were presented to 765 anglers for the catching and freeing of sport fishes.

Public approval of the idea has progressively expanded. The release of fishes in the last four tournaments has increased 10 per cent each season. In the 1960-61 tournament, 40 per cent (24,000) of the total of 60,000 fishes caught and entered in the contest were freed alive. The winner of the trophy presented for the adult fisherman who caught and released the largest number of eligible fishes turned in a score of 714 fishes released. In the junior class, the top youthful angler released 797 fishes.

Fishermen who release the largest numbers of sailfish, tarpon, and bonefish receive awards and each angler who frees five or more sailfish wins a special plaque.

In the International Tarpon Tournament at Punta Gorda, Florida, awards are given for release of tarpon and other species. The tournament functions with an aggregate scoring system which provides bonus points for release of tarpon and allows penalty points for the entry of undersized tarpon.

Since 1955, nearly 1,000 white marlins have been tagged and released at Ocean City, Maryland.

The release of tarpon has long been fostered along the West Coast of Florida in the Boca Grande area. A single scale, frequently, is removed before the tarpon is freed, as the sole evidence of the successful catch and release. Randall and Moffett (1958) reports that some fishing lodges, clubs, and restaurants, where tarpon fisherman congregate, have their walls covered with tarpon scales, duly marked as to place, date, size, and name of the angler.

In the St. Petersburg area, steady strides are being made in the adoption of the catch-and-release philosophy for tarpon. In the most recent Jaycee Tarpon Roundup, the release of tarpon reached an all time high of 55 per cent. Sailfish anglers in this vicinity are starting to recognize the importance of freeing the fishes not intended for mounting.

### Conclusions.

Each season, thousands of sport fishes are caught, killed and discarded. This fantastic destruction of a highly prized but limited natural resource can be reduced by the active development of catch-and-release programs. The recreational significance of angling is enhanced and a greater spirit of conservation is engendered by programs which recognize that the killing and displaying of large numbers of fish is not the mark of angling success.

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