

National Barotrauma Workshop

Atlanta, GA

March 15, 2011

Steve Theberge



Framing the Issue in the U.S.:

Developing Practical, Effective Methods for
Reducing Barotrauma Mortality in Fish



Why Release Reef Fish?

- Minimum size limits to protect breeders
- Increasing number of undersized reef fish being released due to more anglers, larger size limit, more restrictive bag limits
- Some species are rebuilding and have limited or no fishing allowed; "Choke Species"
- Reef fisheries are mixed species complexes; some stocks doing well, some not

How Can We Reduce Barotrauma Mortality in Fish?

- Develop methods for releasing or avoiding fish that will reduce mortality but still allow fishing
- Test effectiveness and practicality of methods
- Get information out to fishers (education and outreach)
- Fishers use methods to reduce mortality in barotrauma impacted fish

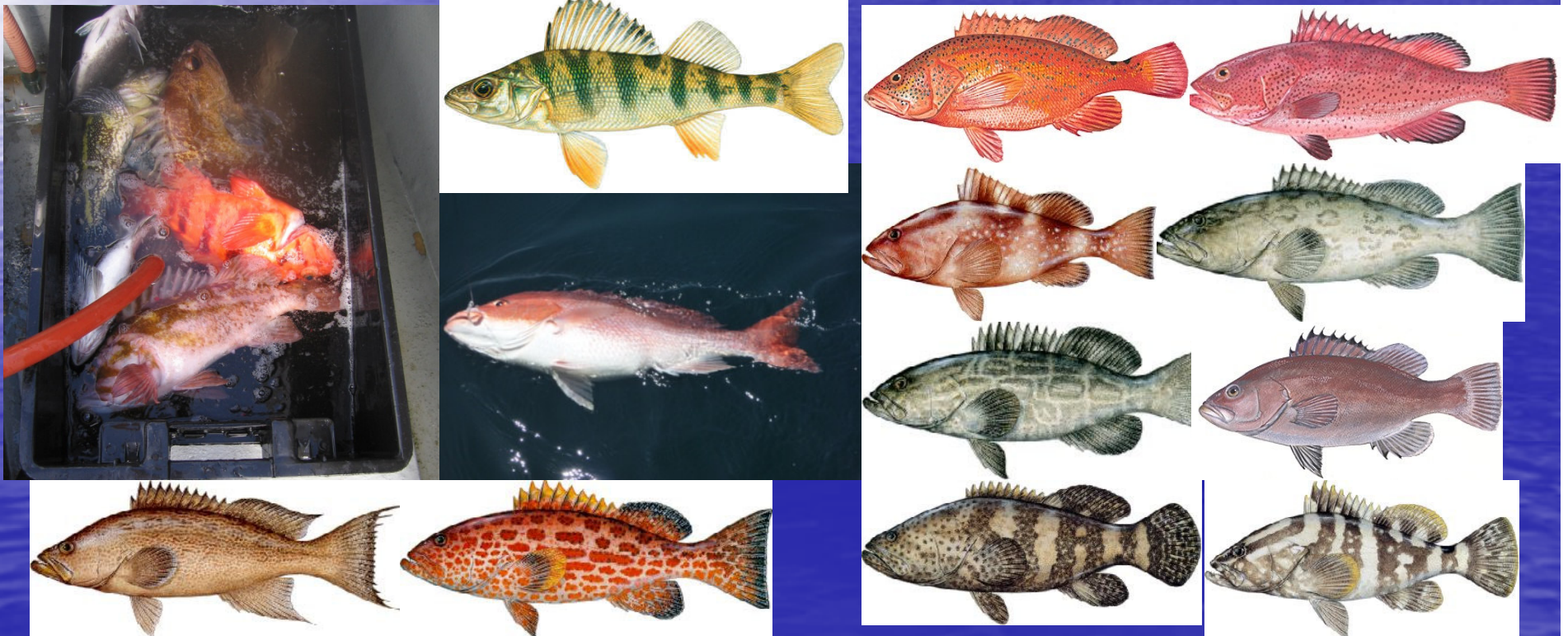
Lab Research Versus Field: Confounding Variables

- Handling
- Sanitation
- Temperature
- Stress
- Predation



Many Different Species, Needs

- Different swim bladder structures
- Different responses to handling stress



Worldwide Issue

Brazil



Capt. Antonio Luiz Amaral
Ilhabela, Brazil
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Deep Release

When I began targeting dusky grouper in 60- to 100-foot depths, I had problems releasing fish in good condition. Deflating the grouper's gas bladder with a needle works, but the fish still has to descend under its own power. Tired from the fight, with a hole in its belly, a grouper has to make a great effort to get back to the bottom. Lowering fish with a weight recompresses fish rapidly, with no incisions, and the fish doesn't have to expend energy to return to its comfortable depth. I believe this technique helps released bottomfish recover more rapidly.

Grouper in my area average 30 pounds or more, so I had to make a release weight heavy enough for the job. Here's how: File the barb off a 12/0 hook, and hang it out of the opening on top of an empty beverage can so that the curve of the hook and the point protrude from the can (point down). Fill the can with melted lead, then add a metal loop on top to serve as a line tie. Cover the weight with plastic coating (shrink-wrap) to protect the boat's finish. I insert the barbless hook in the grouper's upper jaw and send it toward bottom on the downrigger line. Reel up the weight after releasing the fish with a sharp tug.

Australia

Send them back alive!

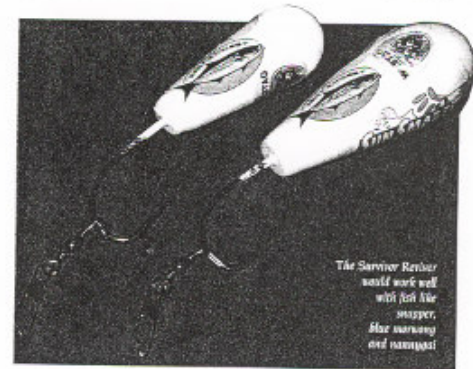
Fish that have been lifted quickly from deep water do not cope well with the change in pressure.

Many fishers have seen oversized or uncoordinated fish returned to the water quickly, but then float away helplessly in the current. They have been unable to regain balance and get below the surface due to an overinflated swim bladder.

These fish are left to the elements and passing birds, and their chance of survival is unknown.

So what is the solution? The method most widely promoted in the past to assist inflated fish to get back below the waves is to puncture the swollen swim bladder with a sharp instrument, such as a needle. Although effective in deflating the bladder, this invasive procedure has serious repercussions.

In some cases, the fish is left with a non-functional swim bladder and it endures the risk of infection from an open wound. The less skilled attempts at this surgical procedure lead to internal organ damage and the eventual death of the fish.



The Survivor Reviver
won't work well
with fish like
snapper,
blue morwong
and mangrove

A new device has been developed to overcome this problem. Known as the Survivor Reviver it is a death release device created in Western Australia by Gary Lilley of Westrig in cooperation

with Redfish and Chris Scoble of Seabass Lures.

This uncomplicated device consists of a barbless stainless hook moulded into a large lead weight, and fitted with a snap skived turning on the hook. To send a fish down into the water, the clip is attached to your rig, or have another line available devoted solely to releasing fish.

The idea is to pass the hook through the upper lip of the fish. It is then quickly lowered to the depth from which it was taken. It will usually release itself soon after or alternatively, the barbless hook will slide out of its lip when the rig is retrieved.

The procedure usually takes less than a minute. A slow retrieval of hooked fish from deep water is always recommended, especially if they feel small, as this will reduce stress.

The Survivor Reviver was developed from the need to release Western Australian chullish following tagging. It would work well in South Australia for species like snapper, blue morwong and mangrove.

If you want more details on the Survivor Reviver contact Frank Prokop at Redfishwest on 081 9387 7864 or ANSA WA on 1980 682 002.

THE SCHOOL OF FISH Educational Fishing Services

FISHING SEMINARS

Day seminars are held at the Australian Fisheries Academy, Port Adelaide on Saturdays and Sundays. Learn about local species, methods, burley techniques, knots, rigs, lures and bait presentation. A video will show responsible live bait collecting, with catch and release fishing of mullet and bream.

You will receive a seminar journal outlining all topics covered, Fish Magic Burley, an SA Angler Magazine with soft drinks and water provided. Win one of 48 great prizes from our sponsors in our end of year draw. (01/07/04).

OTHER SCHOOL OF FISH SERVICES:

River Charters: Our custom built 8.5 metre vessel will allow you to fish in comfort from North Haven and the Port River to Port Augusta.

Land based fishing sessions: Let The School of Fish guide your group on your next fishing trip. Many local and country venues to choose from. All rods, reels, bait and tackle supplied and prizes for the most fish released.

THE SCHOOL OF FISH

www.theschooloffish.com
PO Box 3178 Port Adelaide
Telephone/Facsimile: (08) 8250 9692

Barotrauma Symptoms

Photographs by Oregon Dept. of Fish & Wildlife



- How to decide if you need to vent or recompress?
 - Sometimes getting a fish quickly back in the water may be the best choice.

Release Methods for Dealing with Barotrauma

- Venting body cavity (Puncture Method)
- Recompressing fish using containers or hooks and weights (Hook and Drop/Zing)
- Combination of both (Vent and Zing)
 - Some vented fish still may float
- Avoiding fish that cannot be harvested
 - Skirting hot spots
 - Using selective gear

Venting: Puncturing Body Cavity with Needle



its co-founders Mr. Novak who recently passed away. Every the fishery as a whole and will be a testament of Mr. Novak' and commitment to fisheries conservation and sustainabilit



VENTING PR

Venting Procedure

It is best to vent the fish as quickly as possible with a minimum of handling. If the fish is into the fish's body. Expelling the swim bladder gases will allow the stomach to return to its normal position and insert the venting tool at a 45-degree angle approximately one to two inches from the fish's belly — do not skewer the fish. The sound of the escaping gas is audible. If necessary, exert gentle pressure on the fish's abdomen to aid deflation. The fish's everted stomach will retract. If necessary, revive it by holding the fish with the head pointed downward and move it to a tank of oxygenated water.



HOW THE VENTIN

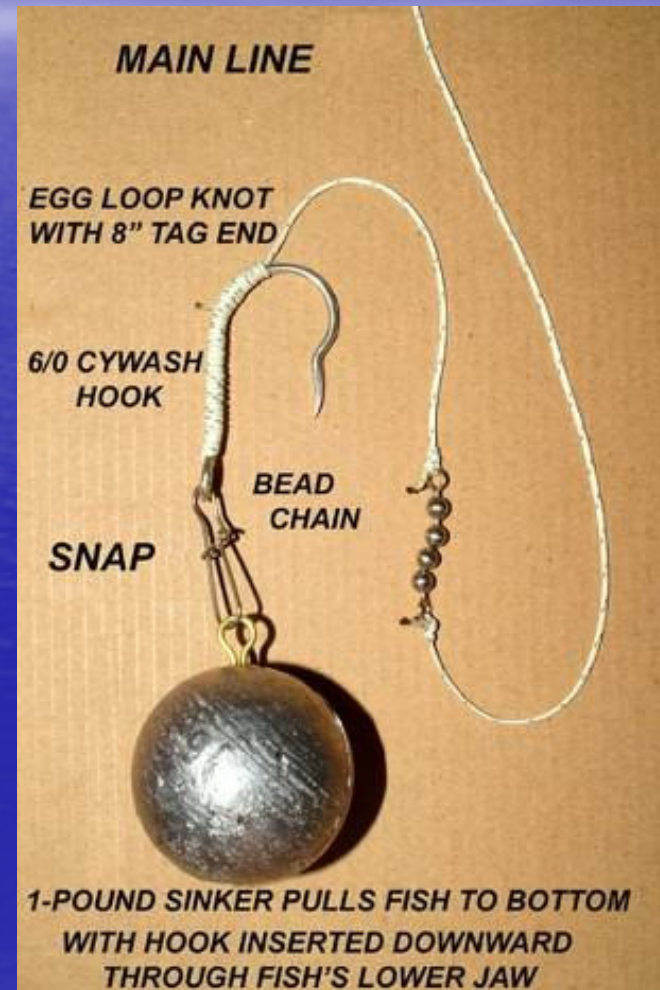


Advantages and Disadvantages: "To Vent or Not to Vent?"



- Fast, cheap; equipment requires little space
- Possible to vent large numbers of fish coming in quickly
- **Infection concern**
- **Going too deep or in wrong place and puncturing other organs**
- **Improper handling and venting**

Recompression: Hook and Drop (Zing) Some West Coast Devices



Bill Shelton and his Shelton's Fish Descender (SFD)



How the SFD Works



Pros and Cons of Hook and Drop



Pro:

- No possible damage to viscera from a needle
- Less infection risk
- Equipment is small, inexpensive

Con:

- If not done correctly fish may fall off hook before getting in water (especially in rough weather with high sided boats)
- Requires dedicated rod
- Takes more time from fishing

Ace Calloway's device

FINAL DESIGN



Notice new jaw design is at 90° from main body of device
This makes the scissor end of the release require less weight to hold the grip end closed

Newly designed jaws only require 2# to hold the grip closed with the same force as did the old jaws with 8#. With a 5# weight (as shown) the jaws will actually hold securely a 20# fish that is active. The new jaw design almost seems to "lock" because of the angle it enters the main body when held in a closed position.

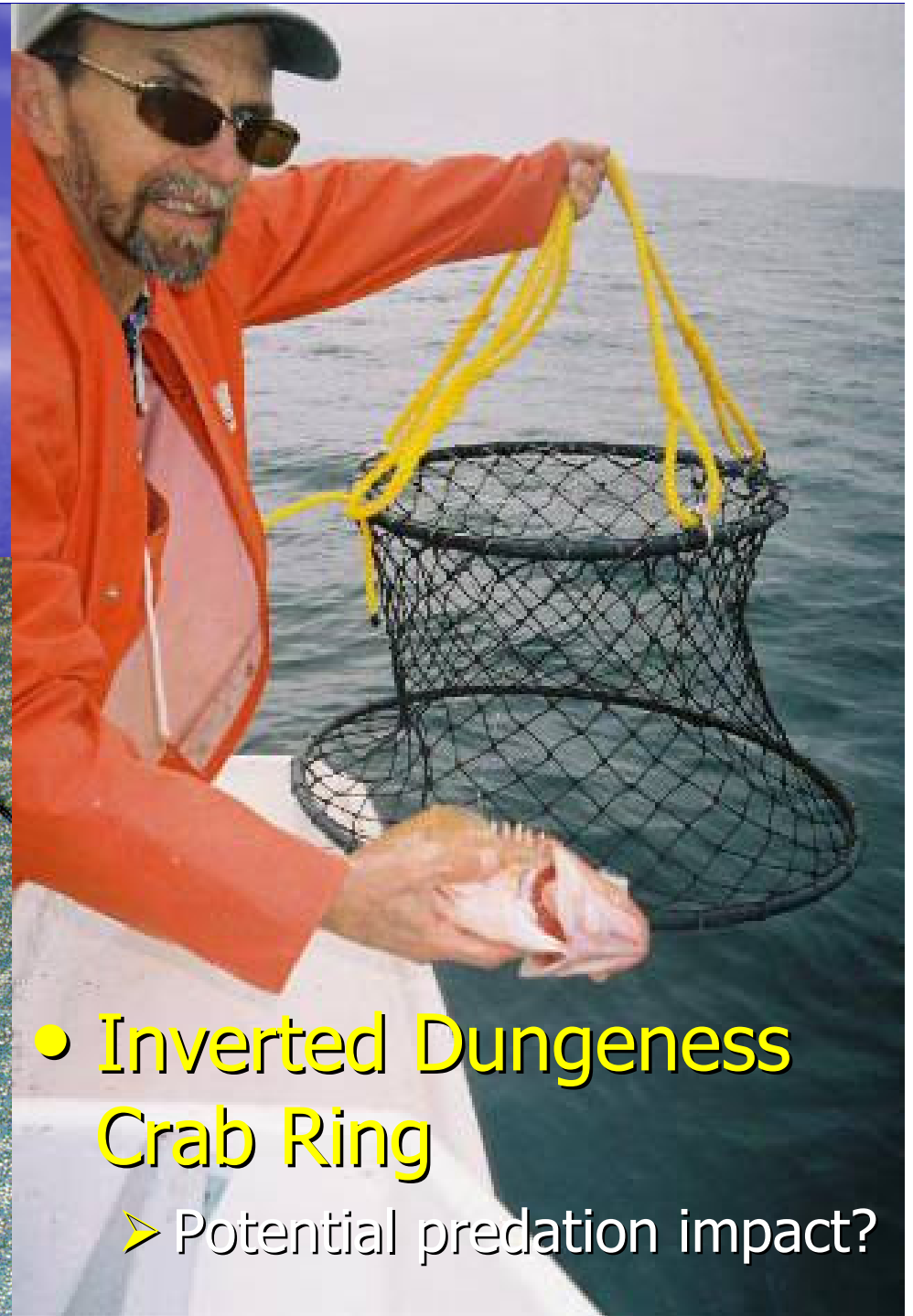
Cabela's fish gripper

Developed by angler Don Hester, modified by Capt. Joe Ockenfels (Oregon)



Milk Crate or Container Recompression Device

- Used in Southern California for at least the past 15-20 Years



- Inverted Dungeness Crab Ring
 - Potential predation impact?



Other Mortality Factors

- Predation (“Barotrauma vs. Barracuda” or lingcod, sharks, **dolphins!**)
- Handling (dropping, gills?)
- Bleeding
- Temperature



Disposable Gaff

Steve Parker, Bob Hanna (Oregon Dept of Fish and Wildlife)



- Easy to use from moving boat
- In aquarium tests fish slips free from device on way down or on bottom
- Rusts away

Avoiding Fish You Cannot Keep

- Size, type of hooks
- Placement of hooks
- Type of lures
- Area avoidance (hot spot management)



Triage in Difficult Fishing Situations

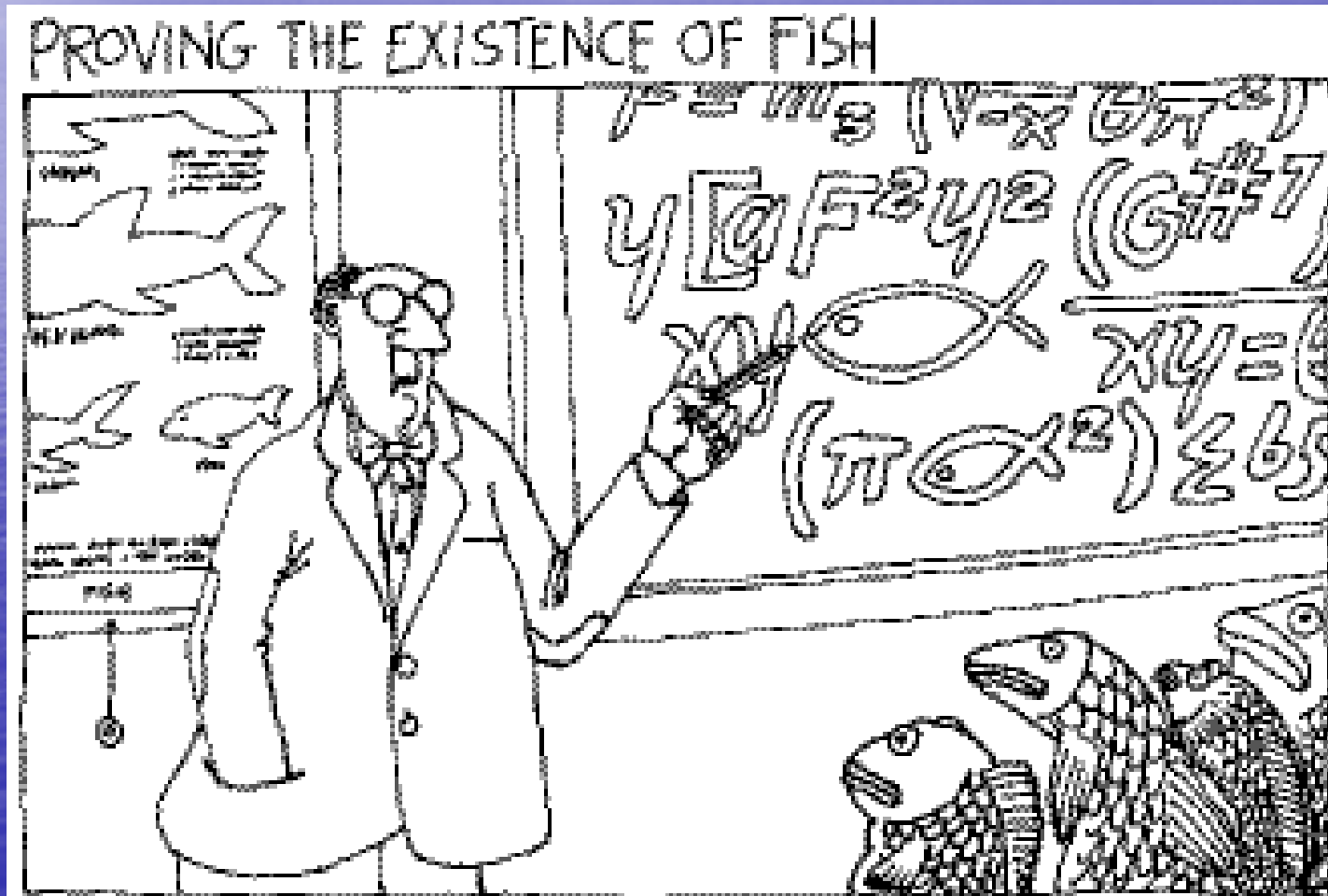
- Dealing with many fish coming in at once



Not Good Business to Release Floaters



Comparing Alternatives: Simulation Modeling?



Releasing Barotrauma Impacted Fish

- **Quickly returning fish to depth is critical**
- Do not high grade fish caught in deep water
 - Creating the right incentives?
- Balancing convenience, effectiveness, and unknown or inconclusive survival information



Collaborating with Fishermen Essential

- Help to refine and develop best release methods
- Judge practicality



Easy to Confuse Fishermen with Conflicting Messages about How to Release Fish

- Oregon:
Avoidance first choice then decompression methods; venting third option.
- California:
Anglers are encouraged to decompress but not to vent.
- Gulf of Mexico:
Fishermen required to carry and use venting tools.



VENTING: A sharp needle or steel cannula is used to puncture a fish's inflated swim bladder. The California Department of Fish and Game does not currently encourage venting as it can cause serious injury to fish and angler. You may accidentally puncture the wrong organ and/or introduce infection. Even when done properly, venting damages a fish's swim bladder.



Getting Angler Buy-in



Education: Getting Information out to Fishers



FISHING

Devices may save released rockfish

KENNARON

Anyone who has ever watched a fisherman reel in a fish, only to see the fish flop around on the deck, struggling to breathe, with a blank look, before being thrown back into the water, knows that a fish is in trouble. Usually someone assumes that a fish in this condition has reached the point of no return. I believed the same thing — until recently, when I found out there was being done by ODFW researchers, the State Parks and ODFW Fisheries, the Coos Bay Salmon Tackle.

As a matter of fact, ODFW studies show that if those fish get back down to their original catch depth, as soon as possible after capture, some percentage can be recovered. They are not yet returned to their original catch depth, their internal organs are relaxed to normal and the fish lose their flared appearance and eventually come back to life and return to normal.

I had to believe. So, in my research, I found a device that I call a "rockfish

The amazing thing is that once it reaches a depth near its catch depth, the fish actually coming back to your net. A quick jerk against the line will break out of the fish's mouth and return to normal.

Jim Walker came up with a way — making a 40" swivel fishing spool device. He even makes his own three spooler, but, one stick on the back end. He gave it to me and said, "Make it."

I took the device home and thought hard before making a few modifications. In the end I had a working mechanism.

I ran the hook using a regular egg loop hook, but use #10-pound DuraLine. When you first make your line, run the top end down 8 inches down the shaft of the hook for use as a leader. You can wrap the hook all the way down the shaft and around the base, using with DuraLine. For a lead chain to the end of the leader so that the fish doesn't get snail off on the way down.

When I showed the device to Dr. Parker and Stephen Thibault, they helped me make it a little further. Dr. Parker suggested using up to 10 pounds

ENGLUND MARINE SUPPLY

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THE FISHING CENTER

A FUN FILLED BAY AREA

SALTWATER SPORT FISHING OUTDOOR SEMINAR

THIS IS A FREE ADMISSION EVENT !!!!

EXPERTS FROM AROUND THE LOCAL AREA AND STATE WILL BE ON HAND TO SHOW THEIR TECHNIQUES AND SECRETS ON HOW THEY SUCCESSFULLY CATCH FISH EACH TIME THEY GO OUT. LEARN ABOUT ALL ASPECTS OF CATCHING FISH IN OUR LOCAL COASTAL AREAS.

TOPICS and PRESENTERS

- "Modern Electronics for the Oregon Coast fisherman" Steve Rich, Electronics Specialist-Englund Marine
- "Ocean and Lake Downrigger Trolling" Terry Bennett, Seattle Downriggers
- "Local River Trolling Techniques" Rick Howard, Professional Guide
- "Ocean Salmon Techniques and Tactics" Paul Kubitla, ODFW Sea Grant Fisheries Agent/Charleston
- "BAROTRUAMA" Releasing Rockfish Deformed Steve Stalunga
- "New Rules and Regulations" Dave Gifford, Oregon State Police
- "Bait Rigging Techniques" Wayne Butler, Charter Boat Captain
- "Underwater Video Footage and New Products" Bill Shelton of Shelton Fishing Products
- "Fishing for Tuna and Halibut" Mark Luffin, O - Star Charters
- "Marine Reserves and Ocean Closures" Wayne Krueger, State Representative John Sullivan, Coos County Commissioner

OTHERS PRESENT:

- Mike Murphy - SEMARCO Oregon Dept. Fish & Wildlife Representative
- Mike Warrilow - LAMIGLAS BOBS Harbor State Coast Guard Auxiliary Representative
- Tom & Tracie Howard - T & H BOYS

Concessions available on seminar site

HUNDREDS OF DOOR PRIZES THROUGHOUT THE DAY

SATURDAY, APRIL 23rd, 2005

9:00 am - 3:00 pm

ENGLUND MARINE Parking Lot, Charleston COOS BAY, OREGON

Labels: BOAT DISPLAYS, FACTORY REPS, FREE ADMISSION, PRODUCT DISPLAYS, ENGLUND MARINE SUPPLY, EXPERT ADVICE

Community Outreach: Fishing Groups and Organizations



Conclusions: Looking into the Future



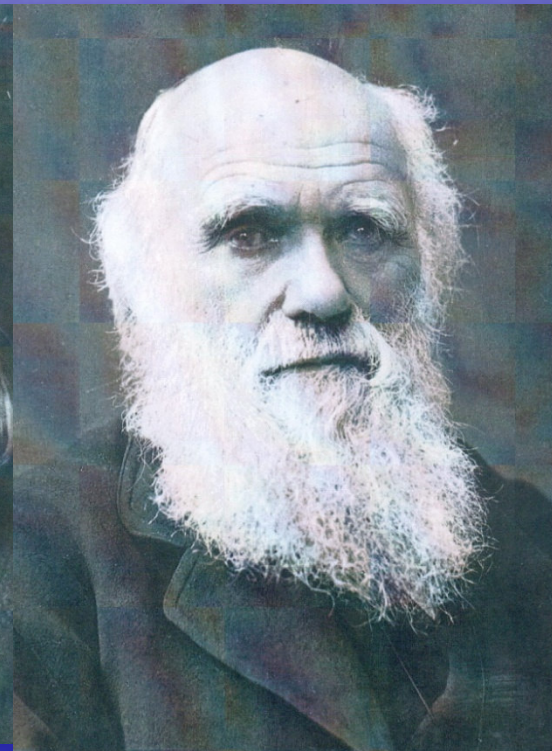
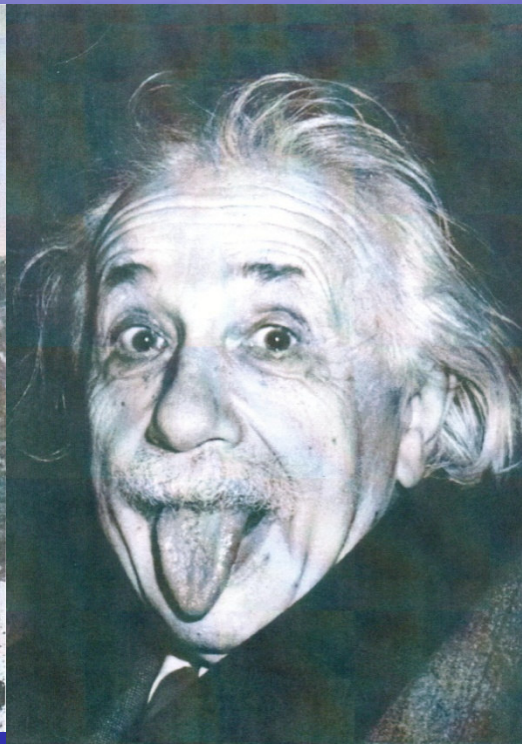
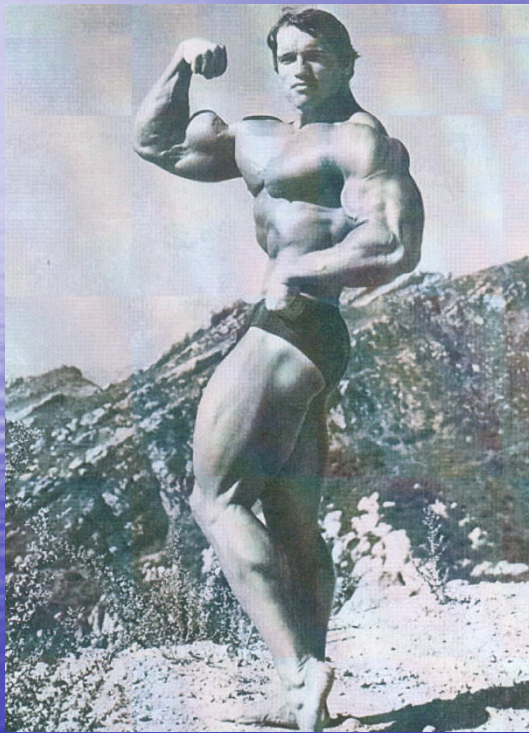
- One size may not fit all; different methods may be appropriate for different situations.
- Fishermen input and buy-in are critical; include them in the decision-making process.

Remember that fishermen just
wanna have fun!



Adaptive Management

Modify Methods and Regulations in Response
to Latest Research Findings



“Survival doesn’t depend on being the strongest or
the most intelligent, just the most adaptable.”

~Charles Darwin

A Fish is a Terrible Resource to Waste





Thanks to:

All the fishers, fisherman inventors, researchers, Sea Grant collaborators, state and federal agency personnel, fishing writers, and fishing organizations with whom I have worked on this issue.

"No one of us is as smart as all of us together."

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