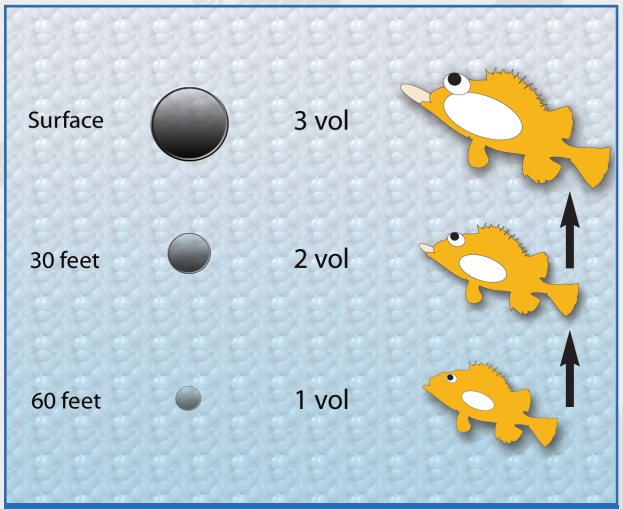
WHY ARE ROCKFISH PRONE TO PRESSURE-RELATED INJURIES?

Every rockfish has a gas-filled organ called a swim bladder that allows the fish to gently control its buoyancy. By deflating its bladder, a fish can descend more easily. By inflating it, its ascent is assisted. When a fish is caught and reeled in, this mechanism for moving vertically in the water column is thrown out of whack.

Depending on the depth at which the fish was caught, a fish's air bladder may swell so much its stomach is forced out its mouth. The eyes may bulge and other organs can be injured as well. Fish suffering from pressure-related injuries are said to be experiencing barotrauma (pressure shock). Without intervention, a fish with barotrauma may die from the progression of its wounds or succumb to temperature shock or predators.

"Floaters" – overly inflated fish that cannot re-descend on their own – are especially easy targets for sea gulls and sea lions.



The volume of a fish's swim bladder can triple when reeled in from depths as shallow as 60 feet.

Alternate communication formats of this document are available upon request. If reasonable accomodation is needed, call DFG at (916) 322-8911. The California Relay Service for the deaf or hearing-impaired can be utilized from TDD phones at (800) 735-2929.

ROCKFISH-BAROTRAUMA MYTHS

Myth:	Reeling a fish in slowly prevents barotrauma.
Fact:	Rockfish cannot acclimate to the pressure drop even when reeled in slowly.
Myth:	The organ protruding from a "popped" fish's mouth is the swim bladder.
Fact:	It is the stomach! Never vent the stomach or try to force it back inside the mouth.
Myth:	You can tell by looking whether a fish will survive or die.
Fact:	When properly recompressed, even fish with severe barotrauma can survive.

ROCKFISH-BAROTRAUMA SCIENCE

According to published results of a Sea Grant study led by researchers at Cal State Long Beach:

The degree of barotrauma in a fish is not a reliable predictor of its survival. The most significant predictor of post-release survivorship is the time a fish spends at the surface.

In experiments with several species of common Southern California rockfish, 83 percent of fish caught at depths between 217 feet and 350 feet, survived when returned to depth within 2 minutes. The odds of a fish dying following recompression nearly doubled with every 10-minute increase in time at the surface.

Tagging and recapture studies showed some released fish were still alive 1.5 years later.

For a listing of current ocean sport fishing laws and regulations, please visit the California Department of Fish and Game Marine Region website at www.dfg.ca.gov/marine/regulations.asp.

Sea Grant

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RESOURCES AGENCY CALIFORNIA DEPARTMENT FISH & GAME

BRING THAT ROCKFISH DOWN

FISH CAN SURVIVE BAROTRAUMA

Amazingly, rockfish that look dead at the surface can "pop" back to life if quickly returned to a native depth range. Because of this, rockfish that you must, or want to, toss back should be quickly recompressed.

Even fish with bulging eyes and protruding stomach can survive if returned to depth quickly. Note: the organ protruding from the fish's mouth is the stomach, not the swim bladder.

TOP FIVE REASONS TO SEND'EM DOWN

Why should you care about helping a released fish return to depth?

1. Floating fish are a waste of the resource.
2. Some populations of prohibited species, such as canary and yelloweye rockfish, may take decades to rebuild.
3. High-grading is illegal and selects for smaller fish in the gene pool.
4. Venting fish may cause more harm than good.
5. Re-descending fish can increase their chances of survival.

Catch-and-release practices work best when you can help with fish survival. Helping fish get back down is good for the resource and the sport.

PRACTICE THE FOLLOWING TECHNIQUES AND SAVE ROCKFISH LIKE THIS!

There are many ways of returning a fish to a depth at which it can recompress. Your choice may depend on the size of the fish you usually catch, your experience as an angler, sea conditions and cost.

Upside-down crate, weighted and attached to rope

Upside-down milk crate, weighted and attached to a rope: Crate is dropped over the fish and then, with the buoyant fish inside, lowered to a minimum depth of 60 feet and kept down until it can swim out on its own. Caveats: In rough seas, fish can escape prematurely and the crate may bang against a fish's extended eyes. Try lowering the fish down gently or paint crate's inside with a rubberized coating to smooth sharp edges.

Inverted barbless hook with weight

Inverted *barbless* hook with weight: Hook fish through lower lip from inside to outside, to keep hook from puncturing an extruded stomach and to prevent line cuts to eyes. You can also hook a fish through the membrane on its upper lip from outside to inside, which some say makes for easier release. In both cases, the weight must lead the fish into the water and be heavy enough to sink it to the desired depth. Fish is released with a sharp jerk on the line. Caveats: Hook can puncture an extruded stomach. Once a fish reaches a depth at which it regains muscle coordination, it may wrestle free prematurely. Method works best with smaller fish.

Commercial fish descender

Commercial fish descenders: There are a variety of practical, easy-to-use fish descenders on the market. The best one for you may depend on the sizes and species you catch. For more information, visit www.sheltonproducts.com and http://git-r-down.com.

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.