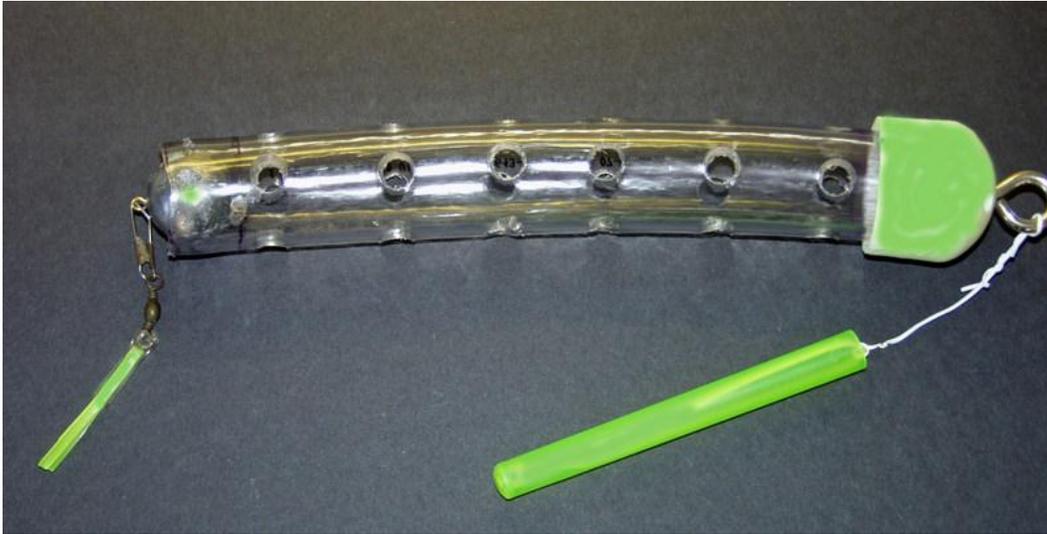


Humboldt Squid - A Humboldt Squid Chum Lure

A Chum Lure is a Jig without a hook, the purpose of the Chum Lure is to attract and “hold” a Humboldt Squid to the Lure allowing it to be brought safely alongside the boat for a “soft” capture using special nets/scoops or Divers in the water (standard pole type large mesh fishing nets should not be used as they can cut the animal as it will be squirming in the net entangling it's arms in the large mesh). The design of the Lure assures that the animal will not suffer physical hook damage or trauma, important considerations in the overall procedure of capturing and keeping the animal alive for tagging or later live laboratory analysis. The Chum Lure was designed taking into mind the unique behavior, foraging and feeding habits exhibited by these animals as observed in the Sea of Cortez, Ensenada and California.



Why use a fabricated chum lure when a big trash fish or a large chunk of old meat should do the same thing? Whereas most ocean predators swallow their prey whole or bite/tear out large chunks to be digested later the Humboldt's sharp parrot like beak shreds and chops its meal swallowing only small bits, during this eating process the surrounding area is saturated with juices and small bits of meat essentially chumming the area, during this time the squid is most vulnerable to attack from other members of the pack who are looking to share his lunch and usually do, This chum-like situation often develops into a feeding frenzy making the capture of a healthy unmolested squid difficult and of course you do not want divers in the water during a Humboldt feeding frenzy. The Chum Lure releases scent and tiny morsels of meat in a more controlled manner allowing the squid to keep the meal to himself and stay safe. The jig may be used many times over, the plastic tube is replaceable and the hardware is reusable.

The Humboldt's rapid growth rate suggests it is a voracious opportunistic predator feeding 24/7, but they do take time outs as we have metered them seemingly laid back at rest at depths of 1000 to 1200 feet, but even then they will usually take a lure and can be "chummed up" to near surface waters. If you can hook one in the deep others will usually follow it up figuring there is a meal to be had so chum and churn* the surface waters. They do hunt in packs feeding upon whatever comes along thus if you hook one there are sure to be many more around.

Most ocean predators are attracted to light, light suggesting a food chain wherein bait fish may be present. In my experience designing and ocean testing illuminated fish attraction devices I noted most large game fish will carefully approach a light from below keeping a safe distance picking off the baitfish

darting in and out of the immediate light area, the baitfish are eating the smaller creatures like micro shrimp and plankton that hug the light. I have never seen a large predator or game fish directly attack a light, on the other hand Humboldt Squid are very inquisitive, they will investigate and embrace a light, they seem particularly attracted to bright flashing strobes.

Commercial squid jigs combine rows of very sharp barb type hooks in line with a green glowing epoxy body. The soft green glow is believed to be close to the wavelength to which the squid eyes are peaked and that same soft glow is close to the color of the luminous organs of deep ocean creatures such as lanternfish which are familiar food sources for night foraging predators. Anyway Humboldt's really go for these glowing squid lures and once caught quickly realize the jig is not a food source, they immediately attempt to free themselves however their efforts only entangle them more securely to the many barbs causing what are often mortal wounds. On many occasions I have noticed that when reeling in a hooked Humboldt others in the pack sense it is in trouble, smell "blood" and often attack eating it on the way to the surface letting go only when they are out of the water. When conventionally jig hooked tension on the line must be maintained, any slack and the squid will most likely break free, whereas the Chum Lure is food and the squid will hang on.....

The Humboldt, like every other ocean predator can't get enough of the little California Market Squid, in addition to being the popular local calamari it excels as bait and chum, either fresh or frozen. When used as bait for bottom fishing (rockfish and lingcod) Humboldt's have been known to quickly strip the bait from the multi-hook rigs, and usually without getting caught on the small hooks, when they do become entangled the rig is destroyed, bottom fishing when Humboldt's are around is not a good idea.

The Chum Lure is based upon the principal that these guys are attracted to light, love to eat the little market squid and will tenaciously attack, hang on to and eat a food source, even if it is another Humboldt. The Chum Lure design is of elegant simplicity, the lures body consists of a 12 inch (or longer) length of soft vinyl 1½" ID plastic hose. A round 8 ounce lead fishing weight just fits into the hose bottom held in place by a stainless steel screw. If additional weight is required it can be dropped in from the top. Twenty four ½" holes are punched into the hose with space between the holes to allow the squids barbed suckers to adhere to the life-like feeling plastic material.

The hose body is filled with chunks of Loligo squid, each squid cut into three or four pieces, do not compress the squid, we want sea water to flow thru releasing juices. When cut in pieces the Loligo "bleeds" a protein cocktail of amino acids that predator fish find irresistible. Secure the top cap and affix a 12" to 18" stainless steel leader. A night attach a large green Cyalume chemical light stick or small Aqua Strobe (West Marine #5918289) to the top cap bolt eye and a green mini 1 1/2" OmniGlow light stick to the bottom fixture. To help the animal hang on as it is reeled in a few 1/2" x 5" wood dowels may be inserted/pushed thru the lure body.

When dropped into a pack of Humboldt's the glow and scent will be noted and the lure attacked. When a Humboldt arm embraces then squeezes the hose even more juice will be expelled along with bits of meat. Hopefully a squid will hang on tight busy biting into the soft plastic to get at more of the juicy meat as the jig is quickly reeled in. The scent in the surrounding water is minimized however it is present possibly causing other squid to attack and/or grab the feast from our main guy taking bits out of him leaving us with a squid free of hook damage but seriously wounded and traumatized by his kin. In actual practice when gathering squid for tagging or live research six or more lures should be deployed thus providing more food sources for the pack allowing single squid to be brought in unharmed.

Ideally we like to do our squidding in the evening hours when they are feeding in the upper waters where we can quickly reel them in. If the pack can be chummed up to surface waters the Hook-less Jig should

be used with a hand line. The Humboldt will find the Loligo packed lure so irresistible that they may hang on even while being lifted aboard, the wood handles may allow a better grip?

The lures passes the classic "Duck Test" with flying colors: It looks like food, feels like food, smells like food, and taste like food, in fact it is real food and should be quickly accepted, tightly embraced and eaten, the only question is: "how long will the animal hang on?" and "can the jig/squid be lifted aboard?"

Field Test: The lure was tested one time in Ensenada at about 7:00 AM (no ChemLights used), it was dropped into a pack metered at about 400 feet and was quickly taken, as the lure was reeled-in it was hit several times, hard, by what we assumed were other squid wanting to share the meal, just as it was about to surface the line went slack and the lure was lost. The 150 pound test 1.40mm white plastic leader material was cut, upon close inspection the leader was subjected to many small bites before it was cut thru suggesting that stainless steel wire leaders should be standard equipment.

The Jig is easily constructed from low cost parts, the plastic cap, hose, bolt/nut, bolt eye and light sticks are available from Home Depot, lead weights, light sticks and stainless steel leader wire available from most tackle shops, the small lights sticks may only be available on-line. The top cap is painted with a custom glow paint made using West Systems 2-stage fast cure epoxy and glow powder, glow powder available on-line, however the standard white cap may be OK as at night it will reflect light from the attached Chemlight stick. Don't know if the wood handles are really needed?

*Churning: Not much used anymore but a very old and effective procedure to bring fish to the boat is churning the water alongside with a high pressure stream from a salt water hose, it aerates and churns the chummed water and creates a sound similar to a feeding frenzy that can be heard many miles away. The old San Pedro and San Diego fishing fleets used this procedure regularly. In Ensenada it has proved effective in luring yellowtail away from dense Kelp paddies.

Humboldt Strobe Lure:

Humboldt Squid usually taken by local sport fisherman weigh in at about 20 to 40 pounds; they live and forage (depending upon location) in waters ranging from about 300 to 3000 feet, usually around bottom structures where other fish may be feeding. During the evening hours from about 10:00 PM to 2:00 AM they often migrate to the upper waters to feed upon lanternfish, shrimp, mollusks, fish and other cephalopods. Fishing with heavy squid jigs and weights below a few hundred feet can become a chore most fishermen would like to avoid. At times these squid can be chummed up to maybe a hundred feet making for easier fishing however chum can be expensive and it goes quickly, and often with no results.

Japanese scientists photographed a Giant Pacific Squid (the Humboldt's big brother) at 3300 feet using a strobe light with chunk bait as a lure. Scott Cassell, an underwater filmmaker used a strobe light assembly to attract and then photograph Humboldt Squid in the upper waters of Santa Rosalia, Mexico. Commercial squid fishing jigs use a green glowing epoxy material for the jig body; these glowing jigs are the "standard" lure for this fishing sport. From personal experience I know that the small market squid residing on the backside of Catalina Island are attracted to green-blue light, from my experience in Ensenada, Mexico I know that the Humboldt will go for just about anything moving in the water, but seem particularly attracted to an easy meal offered by the baited rigs used for rockfish fishing, they are capable of stripping the bait off these small hooks without hooking themselves, a remarkable feat of dexterity. An idea emerged that a lure using a combination of known squid preferences may help attract and lure Humboldt's to the upper waters. A test lure was assembled using:

1. One 14 inch opaque white plastic squid lure body.
2. One Diver's underwater marker/rescue strobe inserted into the plastic squid body.
3. Two conventional glowing squid jigs rigged in series.
4. Two blue-green 2 inch Cyalume chemical glow lights attached to the jigs.
5. One bait holding device (hook) used to secure a Berkley Gulp synthetic squid bait.
6. Several glowing long life green beads attached to the jig barbs.
7. One pound lead weight.

The strobe lure was developed for a Discovery Channel Humboldt Squid Exposition in late August 2008 in waters about 30 miles out of Pillar Point Landing/Half Moon Bay. That evening the squid were evasive, no one home at four usually active sites, arrived at a fifth site about 4:00 AM, nothing noted on fish finder but sent 6 conventional squid jigs down to 1200 feet, after about 15 minutes caught one squid then another. Diver/Camera team went in to shoot squid retrieval action underwater, I launched the strobe lure. Sent strobe lure down to about 1000 feet and slowly brought it up to about 100 feet and down again. Chum was tossed into the water and I brought the strobe up to about 100 feet holding and jigging it at that level. Almost immediately large numbers of squid were taking the conventional jigs at about 100 feet, the strobe lure caught 4 in rapid succession. Once the action started in the upper waters it became a mini feeding frenzy and the strobe lure was no longer needed. All total about 35 squid were landed in about 30 minutes in the 20/25 pound range.

The combination of the strobe lure and a small quantity of chum worked very well bringing up and holding the squid close to the boat for quick and easy fishing.



Expanded



Closed



NatGeo



Capt. Tom - Hulicat



NOAA



Tom Gilly Hulicat Tagging

For several Humboldt videos go: Google>Video>Squid Invasion Discovery Channel

Humboldt tagging: <http://www.int-res.com/articles/feature/m324p001.pdf>