

## **Fade to blue**

[http://articles.chicagotribune.com/2004-08-15/news/0408150290\\_1\\_fish-stocks-trawlers-global-frontier](http://articles.chicagotribune.com/2004-08-15/news/0408150290_1_fish-stocks-trawlers-global-frontier)

### **A tale of fish, pirates, greed and the end of a global frontier World fish stocks vanish in hidden food war**

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By Paul Salopek, Tribune foreign correspondent.  
Chicago Tribune

#### 1 The open boat

Sunset, 3 miles off the coast of Angola.

Strange blue stars are appearing in the west. False stars. They rise unnaturally, against the usual migration of the constellations, from the smooth dark skull of the Atlantic.

These are the deck lights of the foreign poachers. They are Chinese boats, mostly: big diesel-powered trawlers slipping inshore to plunder Angola's rich waters. The fish they come to steal--teeming shoals of hake, sole and grouper--are frozen and shipped to warehouses in Asia, Europe and the United States. If you eat packaged seafood, some will end up on your plate.

By contrast, the open boat Daniana fades into the dusk. It is an Angolan catronga, a frail, 24-foot-long craft that rides the waves like a lurching coffin, and it leaks. A waterlogged Portuguese Bible is its only emergency gear. Rusty wires angle up from the rails to a tubular steel mast. Draping them, the skins of flayed moray eels flap in the salty breeze like grisly scalps.

"Whore pirates," mutters Antonio Rodriguez, the skipper, peering through the gathering darkness at his enemy. "Taking the food right out of our mouths."

A skinny 27-year-old Angolan fisherman, Rodriguez orders his five gristly crewmen to battle stations. He places baseball-size rocks around the greasy deck--crude artillery should the marauders draw close.

This is an act of desperation. Because in the increasingly violent struggle over the planet's last wild fish stocks--a sprawling, global food war replete with rammed boats, frenzied nighttime chases and nameless bodies washing up on desolate beaches--the outcome is all but settled.

For more than 50 years, the motorized fishing fleets of the industrial world have scoured the wide seas, hauling up a seemingly endless bounty of seafood.

But as global fish populations shrivel--and especially since the richest nations have sealed off their coastlines inside 200-mile "exclusive economic zones"--the crews of thousands of steel-hulled trawlers from the developed world have taken to raiding or buying their way into the waters of the poor.

The result: a showdown over scarce protein in which some 20 million ragged traditional fishermen such as Rodriguez are the inevitable losers.

"We are witnessing the last buffalo hunt at sea," says Reg Watson, a researcher at the University of British Columbia who has helped document steep declines in the world's key seafood stocks since the 1960s. "Our southern oceans are becoming the new Wild West."

And so it goes tonight on the remote frontier shores of Angola. As the waves darken to matte black, an armada of international trawlers sneaks inside a 4-mile coastal zone reserved exclusively for local fishermen.

Aboard the *Daniana*, one of Rodriguez's crewmen staggers to the rolling bow. His job: to frantically hand-haul the anchor--a stone tied to a rope--in case a foreign ship bears down on the Angolans.

Rodriguez tosses a baited hook over the side. He wheezes a Portuguese love ballad. The others, too, begin to sing, though none sings the same song.

This is the Angolans' secret weapon: They claim to "sing up" the fish. But as the fishless hours drag on through the night, it's clear the old juju isn't working. The fish are deaf. Or, more likely, the heavy nets towed by the outsiders have dragged away the submerged rocks that have sheltered schools of fish for centuries. Rocks the Angolans locate as if by feel, using mental maps passed down from father to son. Maps now being wiped clean by the pirates.

Dawn finds the fishermen of the *Daniana* sprawled in their squalid boat. They are exhausted. Bitter. Confused by the lack of fish. They bicker. One crewman hooks a razor-toothed eel. Pounding it angrily with a shark club made from a length of old water pipe, he chants, "Piratas! Piratas! Piratas!"

Rodriguez pretends not to hear. He stares numbly out to open sea, slapping the back of his head with a callused palm. As if somehow the pirates were trawling in there also, wreaking havoc on the remembered ocean.

## 2 The pirates

When does a frontier vanish?

The most fabled one of all, the American West, expired more than a century ago in a spasm of violence known as the Range Wars--a vicious fight among settlers over control of the last of the unfenced prairie.

This is precisely what is happening today as the seas' once-vast shoals of fish fade into memory.

Nobody can accurately count ocean fish, but a growing body of research indicates that the world's seafood supply peaked sometime in the late 1980s. The United Nations Food and Agriculture Organization, the agency responsible for tracking the health of the oceans, now estimates that three-quarters of the world's fish stocks are either depleted or hunted to the brink of collapse.

This global food crisis hasn't yet hit the display cases of First World supermarkets, UN [analysts](#) say, partly because fishermen are "fishing down the food chain" for smaller, less appetizing species--and because they have been dipping their nets into the marine larders of the developing world.

Roughly half of the seafood eaten in the [United States](#) today, for example, is pulled from distant oceans. Import figures show that much of this catch comes from southern waters via China, Mexico and Peru.

Fleets of modern trawlers--efficient fish-killing machines equipped with huge nets, onboard [freezers](#) and satellite guidance systems--have been stampeding across the equator for decades, of course, and even more so in recent years as northern fishing grounds have played out. Most fish legally, paying cash-starved governments for the right to harvest their coasts. But lately, as even these end-of-the-world pockets of fish start to vanish, impoverished nations are scrambling to guard their fading riches with air patrols. And before that door closes, desperate crews are turning to what marine scientists call "illicit biomass extraction."

In a word, piracy.

"If you buy fish in a store, do you know where it comes from?" asks a recent UN report on the alarming 100 percent rise in fishing [piracy](#) over the past decade. "It might be stolen from the poor. It could even have cost lives."

Pirate fishing has many guises: outright poaching in another nation's territorial waters; buying local fishing rights but then flouting established catch quotas; and using

prohibited gear, such as small-mesh nets, to indiscriminately [vacuum](#) the host nation's resource.

The result is the same. The fish disappear. And the world's remaining seafood is tainted with violence as impoverished local fishermen fight for their survival.

In Senegal, fishers in hand-dug canoes have been plowed under by European trawlers. Indonesian gunboats now protect domestic fishermen by blasting foreign poachers out of the water. And bizarre cops-and-robbers chases have begun roiling even Antarctica's remote seas: Last August, an Australian patrol boat pursued a sea bass pirate more than 4,000 miles across the bottom of the world.

But the ultimate redoubt of the fishing wars--conflicts that northern consumers benefit from but hardly know exist--is the immensely long, untamed and vulnerable shoreline of sub-Saharan Africa.

For decades, European, Russian, Japanese and Korean boats--both legal and piratical--have raked Africa's rich continental shelves. Now China, a powerful new player in the world's fish race, has steamed into the African battlefield.

"It's like the end of the world," says Antonio Rodriguez, the bewildered Angolan skipper of the *Daniana*. "We don't stand a chance."

Angola's wild, beautiful, 1,000-mile seashore is typical of most in Africa. Three government patrol boats, often docked for lack of fuel, theoretically guard territorial waters as long as the U.S. Western Seaboard. Foreign trawlers have hammered patches of coastline so hard that [fish](#) have become locally scarce--a blow to a nation where a million people rely on UN food aid.

"It's not worth going to sea," says Jose Texeira da Cunha, an unemployed fisherman in Tombua, a forgotten port of crumbling stone [houses](#) and old fish meal factories corroding to rust. "You have to stay out for three days to get the same catches you once got in eight hours."

A dollar a day is the best living most fishermen can hope to wring out of the [ocean](#), da Cunha says. Now some refugees from Angola's fishing wars are even pushing into deserted coastline, seeking more fish.

On virgin beaches, they clap together raw outposts of corrugated zinc and flotsam washed up by the Atlantic. Skinny-legged, bull-chested, shouting gruffly, the men heave their plank boats through the breakers at dawn. And their wives and rag-clad children ululate and dance on the sand, wishing them luck. The seamen wave goodbye in silence. They hold up both arms in an attitude of surrender.

To understand why Angola has emerged as a hotbed of the oceanic food wars, you must rent a Jeep, load it with fuel and water, and drive south from the nation's monumentally dilapidated capital of Luanda.

You will traverse a country almost twice the size of Texas, utterly wrecked by civil war. Though Angola's 27-year-long fratricide finally ended in 2002, its people remain dazed and exhausted. Bullet-pocked towns still lack basic amenities such as power and water. Roads are mere smears of dirt. [Indeed](#), past Tombua, on the remote southern coast, they disappear altogether.

This is the edge of the Namib Desert. And here the route hugs [the coast](#). If you pass a driftwood cairn topped by a human skull, you are on the right track. Park at roughly 17 degrees south latitude. [Camp](#) in a bay where hyenas nose the surf, digging up the eggs of sea turtles. Then climb a sand dune at first light.

There, facing the [sea](#), you will witness one of the great natural wonders of the world: bronze sunlight glinting off countless millions of mullets, kob, sardines, garrick and elf that swim in the rollers like specimens trapped inside immense, translucent aquariums. Behind these glittering clouds of fish loom the silhouettes of monstrous sharks. It is a mesmerizing scene. A glimpse of the primordial majesty of the sea. In terms of sheer fish abundance and biodiversity, no other marine ecosystem in the world--excepting Chile's Humboldt Current--can match it.

This dazzling display of aquatic life is a rarity, one of the last unfished corners of [Africa](#). It owes its existence to the storminess of the local seas, and to a strange dance of waters called the Angola-Benguela Frontal Zone.

Cold currents from the South Pole and warm currents from the equator collide along the lonesome [beaches](#) of Namibia and southern Angola. A comparable boundary on land would thrust together the frosty tundra of the Yukon and the sweltering grasslands of the Serengeti --a bizarre overlap of moose and zebra.

Yet this is exactly what happens in the [ocean](#) off southern Africa. Scientists have compared the swarms of intermixing warm- and cool-water fishes on Angola's seaboard to a "marine Amazon." Meanwhile, only last year, European biologists stumbled across an even more species-rich habitat farther offshore, on the 3-mile-deep seabed: 80 percent of the hundreds of organisms dredged up by a German-led expedition were new to science.

"Whole sections of this coast belong in marine reserves," says Tamar Ron, an Israeli ecologist and the only environmental adviser on the staff of the UN Development Program in Angola. "But there is no political will to protect anything here. No baseline data exists. Nobody funds studies. So we will never know what's being lost through

overfishing."

But noble causes such as marine sanctuaries or "no take" zones--a concept that is rapidly gaining momentum in conservation circles as global [fish](#) populations stagnate or collapse--can seem faintly absurd to the beleaguered fishermen of Africa.

Some policemen stationed, for example, on the remote [island](#) of Ilha dos Tigres, Angola's only official marine environmental preserve, don't protect wildlife; they terrorize bird, seal and turtle nesting grounds with their drunken target practice, local villagers say. Angolan seamen also tell stories of having their shoes and meager catches stolen by officers.

On the feral shores of Angola, even the good guys are flint-hearted.

"This is one of the last good places left on Earth," insists Bruce Bennett, the closest thing to a conservationist on Angola's outlaw coast. "But they're destroying it real fast. It won't last 10 years."

Once an up-and-coming biologist at the University of [Cape Town](#) in South Africa, Bennett pioneered research on the ecological benefits of marine reserves. But he turned his back on academia a decade ago to become a fishing guide in Angola.

Sandpapery, broiled red by the tropical sun, he sports a threadbare pair of shorts and hasn't worn shoes for years. Local Angolans have dubbed him Tarzan. He presides over a tin-roofed fishing camp where he rails against international fishing poachers and the garbage they toss into the sea, polluting Angola's pristine beaches.

Then, poker-faced, he tells this story:

Out casting on the beach one day, he spotted four men rolling in the waves. Two were dead already--drowned--and the others were alive but ranting. They were Congolese stowaways pitched overboard by the crew of a passing cargo ship, standard practice in Angola's cutthroat waters. Bennett dutifully covered the corpses' gull-pecked faces and offered water to the survivors.

Then he kept on angling up the shore. Only when he had bagged his self-imposed limit of lira, a spirited surf predator, did he load the Congolese, alive and dead, into his truck and cart them off to the police.

4 The open boat

"Fish learn," Antonio Rodriguez is insisting.

It is the second day at sea aboard the hard-luck Daniana.

The [boat](#) creaks as if under the iron weight of the African sunlight. The Punta Grossa

lighthouse, gutted by war, stares blindly down from faraway desert cliffs. Gray and empty, the Atlantic stretches away like a fogged mirror.

Rodriguez sits on the rocking bow, his legs dangling over the side, tensing a [fishing](#) line across the pad of his left ring finger--the finger most attuned, Angolan fishermen believe, to the tremblings of the sea. He smiles dreamily into the water. He is warming to his favorite subject: his prey.

"If a hooked fish escapes, you might as well move to another bay," Rodriguez says. "He will alert every friend within a kilometer."

This fact applies, however, only to "heroic" fish, because fish--much like humans, Rodriguez points out--possess distinct personalities.

Hence shad: a "supremely courageous" fish because it fearlessly attacks lures nearly as big as itself.

And pungu: "lazy" because it slumbers by river deltas, waiting for its [dinner](#), in the form of catfish, to swim past its mouth.

And peixe-voador, or four-winged flying fish, the most "confident" fish of all: It holds dead still in the water, invisible to its predators, until--pok!--it explodes into the air like a bullet.

"Don't be fooled by fishes' eyes," Rodriguez says, holding up a bait sardine, its dead, lidless pupils flat as polished stones. "They can think. They even have learned to recognize this boat. I must [paint](#) it a different color every year!"

Such folk wisdom--the vivid, personalized worldview of the true hunter-gatherer--is what irrevocably divides the lives of the antagonists in the oceans' fishing wars.

Afloat day after day, surrounded by elemental beauty, Rodriguez and his crew know how the skin of the sea is made of light, and how you can peer into its middle depths through the mossy green shadows of every ripple. They can read the tiny bubbles of bream [feeding](#) 100 feet below. They know the fickle moods of sharks. The ocean of the industrial trawler deckhand, by contrast, is a backdrop, a dull abstraction: inert, blurred by walls of sound, steel and diesel smoke.

Surprisingly, some of the native lore of traditional fishermen is being confirmed today by science.

Gone is the conceit that fish are pin-brained drones governed by instinct--a view that has made it easier to slaughter them in untold billions.

"Now fish are regarded as steeped in social intelligence, pursuing Machiavellian strategies of manipulation, punishment and reconciliation," say the editors of "Learning in Fishes: From Three-second Memory to Culture," a survey of 500 scientific papers on fish behavior that was published last September. "They also use tools . . . build complex nests and bowers . . . and can even exhibit impressive long-term memories."

Groundbreaking studies by British biologist Dan Hoare and his German colleague Jens Krause reveal that huge fish shoals such as those depicted in countless television documentaries are anything but random masses of identical, robotic organisms. Instead they are complex, hierarchical communities on the move--fish cities where individuals sort themselves into subgroups defined by size, sex, kinship, age and experience. The most recent and startling discovery of all, however, involves fish memory.

Kevin Warburton, an Australian scientist, has revealed that fish not only possess long-term recollections (and some fish live nearly a century) but are capable of lengthening or shortening their "memory [windows](#)" depending on environmental change. This is a skill most humans would envy; fish have learned when it is adaptive to forget.

"Ay!" Rodriguez cries, yanking back on his line as if it were a [lawn](#) mower cord.

Hand over hand he pulls up a slapping 20-pound grouper, or garoupa vermilion, a fish of such hallucinogenic beauty--fiery orange flecked with spots of cobalt blue--that it seems like some exotic sky beast dropped from the heavens, not something hauled from the murky Benguela Current.

It is the first sizable fish landed on the Daniana in hours.

The crew is grumbling. Cramped onto 8 pitching yards of deck, and irritable after two days of working, sleeping and defecating within elbow range of each other, they talk of returning home. The food is scarce and bad: oily moray eels. The fishing is miserable. Lino, the crew's strongman, blames global warming--a punishment from God he overheard on Angolan national radio. But most of the older men curse the foreign trawlers that have licked the seabed clean.

Rodriguez, more guileless and cheerful, tries to raise their spirits.

Whistling, he butchers the grouper on the spot. The valuable carcass goes into the fish hold. And the guts go into a sooty pot. Boiled in seawater, they are dinner for the hungry crew.

## 5 The war

One billion people worldwide, most of them poor, rely on fish as their main source of protein.



A disturbing study published last year by the International [Food](#) Policy Research Institute in Washington and the WorldFish Center in Penang, Malaysia, lays bare the sobering consequences of this massive hunger pang.

Driven by exploding population growth in [developing countries](#), nearly 80 percent of the world's seafood soon will be extracted from tropical waters--the same embattled seas that today also help sate the rich world's craving for fish.

These two competing appetites are colliding brutally in Angola.

"People talk about blood diamonds!" hollers fisheries inspector Jorge Martins, referring to the shadowy [trade](#) in gemstones that has fanned Africa's endless civil wars. "Well, here we have blood fish!"

Shaved-headed, clad in baggy hip-hop shorts and sneakers, Martins is the unlikely defender of 300 miles of anarchic Angolan coastline. He steers a roaring Ministry of Fisheries and Environment patrol boat toward a nighttime ambush against fishing pirates. Eight Chinese trawlers have been spied poaching in sensitive fish nurseries near the port of Tombua. And Martins and his ragtag [band](#) of fisheries police, armed with two AK-47 assault rifles and a medium machine gun, are pounding across the Atlantic waves to confiscate the vessels.

Three hours out of [port](#), the aging patrol boat's steering fails. Apparently, this isn't a surprise. Martins uses an old coffeepot to refill the boat's leaking hydraulic fluid system. But by the time the lawmen finally reach position, dawn singses the horizon glowing orange. And the Chinese, who possess radar, are long gone.

"To do it right, you need something bigger than an AK-47," Martins says of his underdog job as marine avenger. "The surest bet is a rocket-propelled grenade launcher."

He isn't joking. The fishing violence churning Angolan waters--like that in other pirate-infested fishing grounds in Africa, Southeast Asia and Oceania--is nothing short of an undeclared guerrilla war. Occasionally the nautical skirmishes resemble B-grade [Hollywood](#) action flicks. Police hurl grappling hooks onto poaching vessels. Fistfights erupt on decks. And captured skippers hide their passports down their underwear.

Last year, one of Martins' ill-equipped fish posses angrily fired some 300 rounds of ammunition at a pirate trawler that wouldn't obey orders to stop. The barrage shattered the steel boat's windows and running lights, and snapped off the radar and radio antennas, Martins recalls. Still, the sortie failed: The poacher escaped to the open sea. Other missions have ended worse.

Illegal trawlers--lately Chinese, but also Koreans, Spaniards, Namibians, Russians and others--have rammed and sunk attacking Angolan inflatable [boats](#), Ministry of Fisheries

and Environment officials say. Other pirates have hurled buckets of boiling water on Angolan boarding parties. In one case, a foreign ship ran down and killed an irate Angolan fisherman who was trying to block its way with his rickety skiff. And at least two Angolan inspectors have vanished mysteriously while on observer duty aboard large industrial trawlers--suicides, assert the foreign skippers; pushed overboard, the fisheries police insist.

"It's no fish ye're buying," Sir Walter Scott wrote of the hazards of the [trade](#) nearly two centuries ago, "it's men's lives."

Clearly, little has changed. But it will. As with any frontier, the days of the world's [fishing](#) wars are numbered.

One reason is technology.

Aquaculture is fast replacing the relentless global hunt for wild fish. A quarter of all fish eaten today is farmed. And now even poor countries are using the same high-tech means of fencing off their seas that industrial nations pioneered a generation ago. Such tactics, called "Monitoring, Control and Surveillance," employ aircraft and cheap satellite tracking technology to safeguard dwindling fish populations.

"It's the beginning of the end of the cowboys," asserts Paulo Jose Cusso, a young fisheries officer who flew with Angola's first air patrols earlier this year. "We're putting these guys out of business."

And at first glance such optimism appears justified. Cusso's shiny plane soared over Angola's wild shoreline like the first sheriff to swagger into Dodge City. Sweaty pirate crews gaped up in amazement. In the program's first month alone, almost 20 Chinese boats were nabbed red-handed inside protected zones closed to allow fish [stocks](#) to rebuild. Others were caught pillaging fish inside the 4-mile coastal limit reserved for traditional fishermen.

But Angola's new surveillance program completely ignores the opportunists from within.

As in other poor countries, many of Angola's worst poachers are what one fisheries official calls "legal pirates"--that is, outsiders licensed to sift territorial waters for a fee, or in exchange for setting up a [joint venture](#) with local fishing companies. Ministry of Fisheries and Environment records show that many of the Angolan associates in these dubious operations are political elites--ministers, generals or the family of President Jose Eduardo Dos Santos. (One business partner of Chinese pirates sighted by recent air patrols was the president's sister Marta.) Thus, the foreigners who are carting away Angola's marine treasures are shielded from prosecution, helpless fisheries police complain.

"Politicians are using the oceans as a [bank](#) account," Jose Goldschmidt da Silva, the commodore of Angola's minuscule patrol boat fleet, snorts with an angry shrug. "If they keep it up, there will be nothing left worth fighting over. Nothing."

6 The enemy

Twelve degrees south latitude. The Atlantic is the color of wet concrete. A warm offshore breeze carries the faint tang of overripe fruit, smoke and dust--the scent of tropical Africa. The Xangongo, a massive trawler manned by 30 Chinese and two Angolan deckhands, is busy. It drags a net half the size of a football field through Angola's waters, snaring every fish in its wake bigger than a child's hand.

This morning it happens to be 2,000-pound hauls of wriggling, silvery grunts--a bony reef fish of little commercial value. The helmeted crew wades knee-deep into the shuddering mass of life, picking out barely two basketfuls of prized sole, bream and skates. The rest of the dead and dying catch is scraped over the side with square-nosed shovels.

Such grotesque waste is termed "bycatch": the modern fishing equivalent of mowing down buffalo herds for their hides and leaving the flayed carcasses on the prairie to rot. Anywhere in the maritime world, killing so many untargeted species to harvest a handful of valuable fish could be subject to prosecution. Yet so toothless are the laws of the sea in the far, tattered shores of the Earth--whether they be Angolan [environmental regulations](#) or the UN Code of Conduct for Responsible Fisheries--that captain Kim Kuang Ho's main worry is that the "wrong fish" are clogging up his nets.

"This slows us down," says Kim, 33, overseeing his noisy deck operation from an air-conditioned wheelhouse decorated with vases of plastic [tulips](#). "It's bad, bad, bad. Want a Coke?"

Kim is an affable swashbuckler in flip-flops and a Hawaiian shirt.

In the typically murky and unaccountable fashion of the international fishing industry, he and his crew are overwhelmingly Chinese, his boat's owner is listed as Angola's own Ministry of Fisheries and Environment, and its operator is an Angolan-South Korean conglomerate appropriately named Worldwide. Such muddled lines of responsibility, UN fisheries experts say, only complicate law enforcement at sea.

Kim hasn't seen [home](#) for years. A latter-day nomad, he moves from fishery to fishery, having lately chased tuna in the Indian Ocean until those stocks plummeted by more than 90 percent. He embodies the twilight of an era: perhaps the last generation of global fishermen, and part of a far-flung tide of Chinese crews and boats that is tirelessly strip-mining the oceans.

China's fishing fleet has mushroomed sevenfold since the early 1980s, according to the UN. Today, it is by far the largest in the world. And though European fishermen still dominate the waters of Africa, China's eventual supremacy is a foregone conclusion: The nation's exploding appetite for fish, like its burgeoning demand for oil, iron and other natural resources, ensures it will elbow aside all competition. The UN Environmental Program calculates that, at its current rate of consumption, China theoretically could swallow the world's entire seafood catch by 2023.

Moreover, China is becoming fishmonger to the developed world; today, it is the United States' third-largest supplier of seafood.

"They take whatever they can get, wherever they can get it," says Jackie Alder, a researcher at the Fisheries Center at the University of British Columbia in Vancouver. "The Europeans and Russians can be good pirates too. But the Chinese are absolutely single-minded."

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In hapless Angola, that means the superpower is leveraging its control of fishing rights with \$2 billion in development aid to the Angolan government--unprecedented largesse that Angolan bureaucrats say will guarantee China's primacy at sea over European competitors.

"We have been accused of breaking fishing laws, but our captains are simply inexperienced in these waters," declares Antonio Bernardo, the Angolan spokesman for Dalian Yanming [Enterprises](#), a Chinese company that has racked up \$1.3 million worth of fishing fines in Angola. "We are not pirates."

Translating for a grim-faced [company](#) executive who would identify himself only as "Mr. Guan," Bernardo called Angola's fishing police "gun-happy." Both men sat in a high-walled compound in Luanda where scores of Chinese seafarers peered warily from stark barracks. They were fishing crews waiting to rotate to sea.

Back aboard the 140-foot Xangongo, the trawler men's [work](#) ethic is on noisy display.

Steel cables snap taut under tons of fish, instantly vaporizing the seawater that wets them. Hydraulics whine. Captain Kim thunders orders on a public-address system. And northern Chinese seamen with weather-beaten faces sift through the mountainous bycatches day after day, night after night, sweating around the clock on backbreaking six-hour shifts.

At the end of a 60-day trip, the Xangongo's flash freezers are expected to brim with 80 tons of seafood, the precious residue of a slaughter. On this occasion, Angola's fish are bound for European markets. The crew of the leaky Daniana would toil more than four years to amass such a bonanza.

"Some days fishing is good, other days not," Kim says, brushing aside any suggestion that Africa is a final enclave of plenty.

In a gesture of rebuttal, he opens his map cabinet with a flourish. Arranged neatly inside are marine charts of his fishing grounds--the entire world.

## 7 The open boat

The night sea is on fire.

A southerly breeze has stacked up waves like the wales in corduroy, and with them comes plankton, microscopic organisms that float freely in the ocean current, sparking with bioluminescence.

Pale green light smears the surface of the sea. Rodriguez recalls seeing migrating schools of sardines that thrashed the nighttime Atlantic into a weird brightness that seemed to shine from the core of the Earth. Such sights are rare these days.

It is the third day of toil for the Angolans, and finally their luck has turned. Rodriguez has maneuvered his ratty boat close under some crumbling shoreline cliffs, a treacherous place where foreign poachers will not go. The jackpot: a net bulging with 250 gasping pounds of grouper, bream, guitarfish, sharks and skates.

For a few hours it seems like old times. The boat's rock projectiles, instruments of war, lie forgotten under masses of dying fish.

The six Angolans horse the net onboard, grunting snatches of song, clubbing netted sharks, joking about debts to be paid, or about new dresses to buy wives. All the while the shuddering fish make themselves heard as they die--a soft but unsettling medley of sighs, chirrups, clicks and grunts, one of the oldest sounds of human labor in the world, a noise that foreign trawler crews rarely hear over the thrum of their engines.

The electric sea drips from the wet net like fireflies. Drips from the men's busy hands.

Their singing dips and rises across the waves. The fish rise. And as a few squiggle away, they leave faint afterimages in the sea, like ghosts.