

Soundings



American Cetacean Society- Monterey Bay Chapter
PO Box H E, Pacific Grove, CA 93950

AUGUST 2010

**MONTHLY MEETING AT HOPKINS MARINE STATION, LECTURE HALL BOAT
WORKS BUILDING
(ACROSS FROM THE AMERICAN TIN CANNERY OUTLET STORES)
MEETING IS OPEN TO THE PUBLIC**

DATE: THURSDAY, AUGUST 26 , 2010

TIME: 7:30 PM. PLEASE JOIN US AT 7:00 FOR REFRESHMENTS

SPEAKER Chuck Davis, Marine Photographer and Cinematographer

**Title: Stimulating Marine Conservation through Marine and
Underwater Imagery**

This month's meeting occurs during the Blue Ocean Film Festival Week, being held in Monterey for the first time. While we are not an "official venue" for the festival our goal was to participate in the spirit of the event. In that regard we are very please and excited to have Chuck Davis as our speaker for the August Chapter meeting.

Chuck is a specialist in marine and underwater photography and cinematography. He has traveled the globe, with a camera at the ready, filming and taking still shots of many of nature's wonders from the freezing climate of Antarctica to the hot and humid Amazon and many places in between. As a "local", Chuck has captured many images from Monterey Bay and other local locations such as Point Lobos State Reserve.

Chuck's cinematography experience includes many world wide expeditions with the Cousteau filming teams working with the late Jacques-Yves Cousteau and his son Jean-Michel during production of the *Rediscovery of the World* TV series. He was Director of Photography for the television program and later released PBS Home Video: *Jean-Michel Cousteau: Ocean Adventures*: The Gray Whale Obstacle Course, among others. He has numerous IMAX and feature film credits as well.

Chuck's still images have appeared nationally and internationally in many magazines including *National Geographic* and *Audubon*. His fine art black and white and color work has been represented in special exhibitions by the Ansel Adams Gallery, the Christopher Bell Collection Gallery and the OCEANS Gallery to name a few.

Please join us for a very special program where art and science will come together in a unique, informative and entertaining way.

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CALENDAR

August 14: ACS National Blue Whale Trip will take place on the Condor Express based out of Sea Landing in Santa Barbara, CA. Trip departs at 8:00am and returns at 4:00pm. For more info and reservations please call Bernardo Alps at 310-597-0449

August 25-29: Blue Ocean Film Festival. Monterey, CA. A global Ocean Film and Conservation Event (www.bluefilmfest.com). Festival Speakers and Film Makers Include Dr. Sylvia Earle, Howard and Michele Hall, David Doubilet, Jean Michel Cousteau.

August 28, 9am-1pm: ACS Monterey Bay Chapter Summer Whale Watch Fundraiser. Cost- \$50.00 Boat-Sea Wolf 2. Location- Monterey Bay Whale Watch-Fisherman's Wharf, Monterey, CA. Whales of the summer include blue, humpback, fin, minke and killer whales. For more info and reservations call Tony Lorenz at 831-901-7259 or Diane Glim at 831-646-8743.

Sept 7-11: 1st World Seabird Conference Victoria, Canada. For more info go to www.pacificseabirdgroup.org

November 11-14: Western Society of Naturalist 91st Annual Meeting: San Diego, CA. For more info go to www.westernsocietyofnaturalist.org

Nov.12-14: The American Cetacean Society 12th International Conference will be held in Monterey at the Embassy Suites Hotel and Conference Center. Speakers include Richard Ellis, John Calambokidis, Thomas Jefferson, Bernd Wursig, and Robin Baird. The conference will also include two whale watch trips, kayaking along Cannery Row, a Point Lobos interpretive hike and a marine life photo contest. For a full schedule and prices please go to acsonline.org. Local Monterey Bay ACS chapter volunteers are needed, and sign-ups will be available at the monthly meetings.

BOOK RECOMMENDATION

Tuna's End- The fate of the bluefin, the oceans and us. By Paul Greenberg. New York Times Magazine June 27, 2010

Four Fish: The Future of the Last Wild Food
By Paul Greenberg. 2010 Penguin Press

Kenneth S. Norris, Naturalist, Cetologist and Conservationist 1924-1998 An Oral History Biography. 2010 UC Press

Egypt's Ancient Whales: Valley of the Whales
By Tom Mueller. August 2010 National Geographic Magazine

CALL ME LEVIATHAN MELVILLEI

By Janet Fang-- A Peruvian desert has turned out to be the final resting place of an ancient sperm whale with teeth much bigger than those of the largest of today's sperm whales.

The fossil, dated at 12–13 million years old, belongs to a new, but extinct, genus and species described in Nature. Named *Leviathan melvillei*, it probably hunted baleen whales.

A team of researchers recovered 75% of the animal's skull, complete with large fragments of both jaws and several teeth. On the basis of its skull length of 3 metres, they estimate that *Leviathan* was probably 13.5–17.5 metres long, within the range of extant adult male sperm whales (*Physeter macrocephalus*).

Its largest teeth, however, are more than 36 centimetres long — nearly 10 cm. longer than the largest recorded *Physeter* tooth.

Modern sperm whales lack functional teeth in their upper jaw and feed by suction, diving deep to hunt squid. Conversely, *Leviathan* had massive teeth in both its upper and lower jaws, and a skull that supported large jaw muscles. It may have hunted like raptorial killer whales, which use their teeth to tear off flesh.

Co-author Klaas Post of the Natural History Museum Rotterdam in the Netherlands stumbled across the fossil in November 2008 during the final day of a field trip to Cerro Colorado in the Pisco-Ica Desert on the southern coast of Peru — an area that is now above sea level owing to Andean tectonic

activities. The fossils were prepared in Lima, where they will remain.

MOBY MONIKER

The name given to the creature combines the Hebrew word 'Livyatan', which refers to large mythological sea monsters, with the name of American novelist Herman Melville, who penned *Moby-Dick* — "one of my favourite sea books", says lead author Olivier Lambert of the National Museum of Natural History in Paris.

The authors think that *Leviathan*, like the extinct giant shark, preyed on medium-sized baleen whales, which were between 7 and 10 metres long, smaller than today's humpback whales and widely diverse at the time. The authors speculate that *Leviathan* became extinct as a result of changing environmental conditions. "Top predators are very sensitive to the changes in their prey," Lambert says.

Changes in number, diversity or size of baleen whales, as well as the climate cooling that occurred at around *Leviathan's* time, would have had dire impacts. The creature's surviving cousins — *Physeter*, pygmy and dwarf sperm whales — are specialized deep-diving squid hunters that occupy a different ecological niche from *Leviathan*.

According to vertebrate palaeontologist Lawrence Barnes at the Natural History Museum of Los Angeles County, this discovery demonstrates that sperm whale-like cetaceans were much more diverse in the past and that the modern sperm whale and pygmy sperm whales are the "only surviving vestiges of a larger evolutionary radiation of related whales in the past".

BATTERING RAMS

All sperm whales have characteristically large foreheads to hold their 'spermaceti organ', a series of oil and wax reservoirs buttressed with massive partitions of connective tissue. Scientists have long thought that this organ helps sperm whales to dive deeply to feed.

The curved 'basin' atop *Leviathan's* snout suggests that it also had a large spermaceti organ, even though it probably did not dive to feed. The authors speculate that, if *Leviathan* hunted baleen whales near the surface, the large spermaceti organ existed long before modern sperm whales became specialized for foraging squid at depth. The organ could have served other functions, such as echolocation, acoustic displays or aggressive head-butting.

"Spermaceti organs could be used as battering rams to injure opponents during contests over

females," says evolutionary morphologist David Carrier of the University of Utah in Salt Lake City.

According to Carrier, at least two nineteenth-century whaling ships were sunk when large males punched holes in their sides with their foreheads, Carrier adds, and *Leviathan* may have used forehead ramming to dispatch its prey.

<http://www.nature.com/news/2010/100630/full/news.2010.322.html#content>

KILLER WHALES AND THE MYSTERY OF HUMAN MENOPAUSE

ScienceDaily (July 2) — The evolutionary mystery of menopause is a step closer to being solved thanks to research on killer whales.

A study by the Universities of Exeter and Cambridge has found a link between killer whales, pilot whales and humans -- the only three known species where females stop breeding relatively early in their lifespan.

Despite very different social structures between the three species, the research shows that in each case females become increasingly genetically related to those they live with as they get older. Because of this, there is a motivation for older females to do what is best for the survival of those around them.

This creates a 'grandmother' role, where the success rate of breeding in the group can be helped by older females sharing parenting knowledge and stopping breeding to allow younger females easier access to resources.

The research, published in the *Proceedings of the Royal Society B*, is the first to provide a plausible explanation why these species in particular are the only ones in which females finish reproduction while they still have decades left to live.

Dr Michael Cant, from the University of Exeter's School of Biosciences (Cornwall Campus) and a Royal Society University Research Fellow, said: "It's always been puzzling as to why only humans and toothed whales have evolved menopause, while females in all other long-lived species continue breeding until late in life.

"Although the social behaviors of the three menopausal species are very different, there is a common link: their social systems mean females become more related to those around them as they get older. This predisposes females of our species, and those of killer whales and pilot whales, to the evolution of menopause and late life helping."

Humans are thought to have evolved in groups in which young females left their group to find a mate. This would have meant they started their reproductive lives in families to whom they were genetically unrelated. Later in life, however, as their offspring start to breed, they become more genetically related to those around them and have the option to cease reproduction to help raise their 'grand-offspring'.

However, this argument doesn't seem to explain menopause in killer whales or pilot whales, in which both sexes remain in their natal family groups throughout their life, but occasionally come together with other groups to mate. The new research, however, shows this very different social system has the same overall effect on patterns of genetic similarity within groups: females become more closely related to infants in the group as they get older.

By contrast with humans and menopausal whales, in other long lived mammals it is typically males who leave the group to breed, and females who stay with their mother. According to the research, in this case older females will be selected to continue breeding rather than give up reproduction to help raise grandchildren.

Dr Rufus Johnstone, from the Department of Zoology at the University of Cambridge, and co-author of the study, said: "For the first time we can see a common link between menopausal species which provides a valid explanation as to why this trait might have evolved. This isn't likely to be the only factor relevant to the evolution of 'grandmothering' and menopause, but it does give us an idea why it is restricted to so few species in the animal kingdom."

www.sciencedaily.com/releases/2010/07/100701103405.htm

KRILL HARVEST CERTIFICATION UPSETS CONSERVATIONISTS

By David Jolly (June 22) A decision by a nonprofit organization to certify a company's Antarctic krill harvesting has drawn fierce criticism from conservationists and undercut the group's image as a diligent steward of ocean fishing stocks.

Krill, tiny pink shrimp-like organisms that dwell in vast schools, are an essential link in the Antarctic food chain, a food source for penguins, seals and many species of whales in the Southern Ocean. Fisheries have harvested it as food for farm-raised salmon and for its oil, rich in omega-3 acids, used in human dietary supplements.

Last month the 15-year-old Marine Stewardship Council certified the krill fishing of the Norwegian company Aker BioMarine as environmentally sustainable. In essence, it said that the operation was in keeping with its core principles — namely, that fisheries must maintain a healthy population, must not damage the ecosystem and must be effectively managed.

But Gerald Leape, director of the Pew Environment Group's nonprofit Antarctic Krill Conservation Project, said that the council "ignored irrefutable evidence" of threats to the Antarctic ecosystem in granting the certification, which gives Aker BioMarine the right to label its krill-oil pills with the council's blue logo.

No one is suggesting that krill stocks are in imminent danger of extinction. But opponents of certification say that scientific data on the fishery's impact is lacking, and that the council's decision is thus based on guesswork rather than on research into the long-term effects.

Even if the fishery is healthy now, they argue, the Marine Stewardship Council is encouraging fishers to exploit the Antarctic ecosystem, which already faces an uncertain future because of its retreating ice pack and acidification.

Casson Trenor, a Greenpeace campaigner, wrote that the council had given "an unofficial nod to the basic idea that vacuuming up the tiny life forms forming the foundations of the oceanic ecosystem is an acceptable practice."

The council counters that the harvest — at 150,000 tons in the 2007-8 fishing season — amounts to less than 1 percent of total estimated krill biomass for the area.

There seems to be at least a grudging acknowledgment that Aker BioMarine's fishery — which is a single, technologically sophisticated ship — is relatively well run. But opponents say that the council should have looked at the overall impact of krill fishing, and not just assessed one company.

Some of the friction comes down rather to a growing sense among the council's critics that no industrial fishery can really be sustainable. The United Nations Food and Agriculture Organization warned last year that 80 percent of the oceans' commercial fish stocks were either being fished at maximum limits or were overexploited.

"If you had asked me a few years ago, I'd have said the M.S.C. was better than nothing," said Jennifer Jacquet, a postdoctoral researcher at the University of British Columbia Fisheries Center who

has studied marine eco-labeling. “Today, I’m skeptical.”

The Marine Stewardship Council was founded in 1995 by the World Wildlife Fund and Unilever, then a big seafood retailer, to encourage stores, restaurants and consumers to choose fish harvested in responsible ways. Under the council’s system, third-party contractors assess the fisheries at a cost ranging from \$20,000 to more than \$100,000 and recommend whether they should be certified before the council acts. The fisheries also undergo annual audits and seek recertification every five years.

So far the council has certified 86 fisheries around the globe and more than 5,000 seafood products. No fishery has ever been denied certification by the council once it was recommended for it, although adjudicators have regularly required remedial action.

Yet some scientists argue that the council’s pledge that certified products come from — and can be traced back to — a sustainable fishery does not hold up well to scrutiny.

Last fall there was an outcry over the certification of the Pacific hake fishery off the coast of British Columbia and the United States. The move was strongly opposed by the Monterey Bay Aquarium in California and by Oceana, a conservation group. They cited studies showing that stocks of the fish, also known as Pacific whiting, had fallen by 89 percent since the mid-1980s.

The council replied that an independent team of scientists had found that the fishery met its standard and that the finding had been supported by an independent adjudicator.

Sidney Holt, an expert on fish population dynamics who helped the council write its basic principles in the 1990s, said he had become “extremely unhappy” with the organization.

The problem, he said, was that the outsourcing of fishery assessments to commercial contractors paid by the fisheries created a conflict of interest, because the contractors had an incentive to present the science in a way most flattering to the fishery. “It’s like having the prosecutor in court appoint the judge,” he said.

But Mike Sutton, a founder of the council who is now director of the Center for the Future of the Oceans at the Monterey Bay Aquarium, said that argument was “absolute nonsense.

“The truth is that somebody’s got to pay for certification,” just as companies pay auditors to certify their books, he said.

In another controversial Antarctic case, an independent adjudicator sent an assessment back to a company for reconsideration after it recommended certification for the Ross Sea toothfish, marketed in the United States as Chilean sea bass. Scientists had accused Moody Marine, the company that carried out the stock assessment, of ignoring unfavorable data.

Asked about possible conflicts of interest in certifying fisheries, an official from Moody Marine, Andrew Hough, said, “We base our reputation on independence and impartiality.”

James Barnes, the executive director of the Antarctic and Southern Ocean Coalition, an environmental group, said that in the toothfish case, about 25 international scientists with decades of Ross Sea experience had strongly opposed certification, but “were slapped aside as though they were schoolboys.”

Kerry Coughlin, the Marine Stewardship Council’s regional director for the Americas, said that certification had been recommended over the objections of some scientists, but not all.

Some of the criticisms are being registered in the marketplace. For example, Whole Foods Markets has said it will no longer sell krill-oil supplements, logo or no logo. Mr. Sutton, the council founder who now works at the Monterey Bay Aquarium, said it was essential for the fishing industry to work with conservationists if it wanted to effect change, because “market-based initiatives have more impact than government regulators ever will.”

“It seems to me that it’s doing exactly what it was intended to do,” he said of the council, “and that is, move the whole industry closer to sustainability.”

<http://www.nytimes.com/2010/06/23/science/earth/23krill.html>

DOLPHINS PREFER HIGH-ENERGY FISH

By Matt Walker, Editor, Earth News -- Researchers studying dolphins in the Atlantic Ocean have found that, contrary to expectation, dolphins are not opportunistic feeders that take whatever prey is available.

Instead, they carefully select which fish to consume, preferring to eat energy-rich lantern fish while ignoring other lower quality fish species.

Cold-blooded ocean predators such as sharks make no such distinction.

Details of the discovery are published in the *Journal of Experimental Marine Biology and Ecology*.

DISTINCT PALATE

Marine mammals have evolved a diverse range of feeding strategies.

Some orcas (killer whales) specialise in eating seals rich in fatty blubber, while the more sedentary dugong is herbivorous, surviving on a low-energy diet of seagrass.

But many smaller whale and seal or sea-lion species are often described as being opportunistic feeders, taking whatever food is available.

However, few have actually been studied in enough detail to know if they select which prey to eat.

So Dr Jerome Spitz and colleagues at the University of Rochelle in France studied the diet of short-beaked common dolphins (*Delphinus delphis*), the most abundant species of dolphin living in the warm off-shore waters of the Atlantic.

They compared the range of fish species found in the stomachs of dolphins accidentally caught in tuna drift nets off the Bay of Biscay, with the abundance of fish species in the sea, measured by trawling surveys.

The scientists found that the dolphins have a distinct palate.

Instead of eating more of the most common species, which would be expected if dolphins feed opportunistically, the dolphins carefully selected which fish to consume.

For example, the dolphins regularly ignored fish that contained less than 5kJ per gram of energy.

These included the most abundant fish, a alepocephalid scientifically named *Xenodermichtys copei*, which has 2.2kJ per gram of energy, and fish such as the Bean's sawtooth eel (*Serrivomer beanii*) which contains 2.1kJ per gram, and the Boa dragonfish (*Stomias boa ferox*) which has 2.8kJ per gram.

The dolphins mostly ate two species of less common lantern fish, the Kroyer's lanternfish (*Notoscopelus kroeyeri*) which contained 7.9kJ per gram and the Glacier lanternfish (*Benthoema glaciale*) which has 5.9kJ per gram.

Other research backs this finding, suggesting that striped dolphins (*Stena coeruleoalba*) also appear to prey on high quality Kroyer's lanternfish more often than other species.

COLD-BLOODED MENU

Dolphins probably need to feed on high-energy fish to fuel their own energetic lifestyle, as warm-blooded social animals that range widely and can swim at high speeds.

Other large cold-blooded ocean predators, such as blue sharks (*Prionace glauca*) or swordfish

(*Xiphias gladius*) rarely appear to take high-quality fish, preferring to dine on larger, leaner prey.

http://news.bbc.co.uk/go/pr/fr//earth/hi/earth_news/newsid_875500/8755581.stm

GROUP HAS IDEAS TO PREVENT HAWAII DOLPHIN BYCATCH

HONOLULU (AP Jul. 21) - Fishermen who use longlines to catch ahi, mahi-mahi and other fish off Hawaii should use a different kind of hook so they don't accidentally severely injure or kill a rare dolphin species, a federal advisory group said.

Longline fleet captains should undergo training on how to release any mistakenly caught false killer whales in a way that minimizes the chance they'll be seriously harmed, the group told the National Marine Fisheries Service, the federal agency responsible for regulating the fishery.

The agency had asked scientists, fishermen, conservationists and regulators to form the advisory group and make recommendations.

It acted in response to data showing the fleet is accidentally killing or seriously injuring an average of 7.4 false killer whales each year. This exceeds the 2.5 per year that the population can lose without hurting its ability to sustain itself.

Scientists estimate about 120 of the dolphins live in waters up to 60 miles off Hawaii's coasts. A few hundred more live close to Hawaii in waters farther out.

The animals tend to get caught by longlines because they eat the fish that fishermen have snagged for human consumption: yellow-fin tuna, mahi-mahi, and ono.

"People have known that false killer bycatch in the fleet has been an issue for about 10 years," said Robin Baird, a research biologist at Cascadia Research Collective and a member of the Take Reduction Team. "The fact that we came to consensus is great."

The National Marine Fisheries Service is expected to compile a list of proposed regulations after reviewing the recommendations. The agency will ask the public to comment on its proposals before completing any new rules.

The advisory group, in a report submitted Monday, recommended the longline fleet use circle hooks instead of straighter Japanese-style tuna hooks.

The team believes false killer whales are less likely to get caught on the circle hooks. They also believe those that do get caught on them are more likely to be able to wiggle free.

It's recommending that boat captains attend training sessions on the least harmful ways to cut hooked false killer whales free.

Another idea would close a fishing area north of the main Hawaiian islands year-round instead of just for eight months a year. Many false killer whales are found in this area known as the Northern Exclusion Zone, which is also a rich tuna fishing ground.

Sean Martin, president of the Hawaii Longline Association and an alternate team member, said the recommendations were reasonable given the limited information the group had on false killer whales. He's looking forward to seeing the results of a new federal study, planned for this fall, on the size of the false killer whale population off Hawaii.

He said the longline industry wouldn't wait for the fisheries service to complete new regulations before it started changing some of its practices. The longline association would begin training boat captains and urging fishermen to use circle hooks right away, he said. Martin estimated about half the fleet currently uses circle hooks.

"The sooner we can prove or disprove the effectiveness of the measures that the team has put forward, the better off we are as an industry," he said.

The species is particularly vulnerable because false killer whales don't reproduce quickly or frequently. They're known to start calving at around 15 or 16 years old, and spawn roughly every seven years.

The Take Reduction Team made its recommendations Monday after four meetings and multiple e-mail messages and conference calls over a six-month period.

SIGHTINGS compiled by Monterey Bay Whale Watch. For complete listing and updates see www.gowhales.com/sighting.htm

| Date | # | Type of Animal(s) |
|----------------|------|-------------------------------|
| 7/25 late p.m. | 12 | Blue Whales |
| | 60 | Humpback Whales |
| 7/25 p.m. | 12 | Blue Whales |
| | 35 | Humpback Whales |
| | 450 | Risso's Dolphins |
| | 125 | Northern Right Whale Dolphins |
| 7/25 a.m. | 20 | Blue Whales |
| | 55 | Humpback Whales |
| | 300 | Pacific White-sided Dolphins |
| | 2200 | Risso's Dolphins |
| 7/24 late p.m. | 10 | Blue Whales |
| | 14 | Humpback Whales |
| | 30 | Risso's Dolphins |
| | 20 | Harbor Porpoise |
| 7/24 p.m. | 10 | Blue Whales |
| | 17 | Humpback Whales |
| | 80 | Risso's Dolphins |
| | 70 | Northern Right Whale Dolphins |
| | 7 | Harbor Porpoise |
| 7/24 a.m. | 12 | Blue Whales |
| | 35 | Humpback Whales |
| | 200 | Pacific White-sided Dolphins |
| | 2500 | Risso's Dolphins |
| | 200 | Northern Right Whale Dolphins |
| | 8 | Harbor Porpoise |
| | 1 | Basking Shark |
| 7/23 late p.m. | 8 | Blue Whales |
| | 15 | Humpback Whales |
| | 300 | Risso's Dolphins |
| | 600 | Northern Right Whale Dolphins |
| 7/23 p.m. | 18 | Blue Whales |
| | 60 | Humpback Whales |
| | 10 | Harbor Porpoise |
| 7/23 a.m. | 21 | Blue Whales |
| | 70 | Humpback Whales |
| | 50 | Risso's Dolphins |
| | 7 | Harbor Porpoise |
| 7/22 late p.m. | 6 | Blue Whales |
| | 17 | Humpback Whales |
| | 50 | Risso's Dolphins |
| 7/22 p.m. | 13 | Blue Whales |
| | 60 | Humpback Whales |
| | 400 | Risso's Dolphins |
| | 150 | Northern Right Whale Dolphins |
| 7/22 a.m. | 12 | Blue Whales |
| | 85 | Humpback Whales |
| 7/21 late p.m. | 18 | Blue Whales |
| | 70+ | Humpback Whales |
| 7/21 p.m. | 18 | Blue Whales |
| | 52 | Humpback Whales |
| 7/21 a.m. | 17 | Blue Whales |
| | 40 | Humpback Whales |
| 7/20 p.m. | 20 | Blue Whales |
| | 40 | Humpback Whales |
| 7/20 a.m. | 23 | Blue Whales |
| | 45 | Humpback Whales |
| 7/19 late p.m. | 20 | Blue Whales |
| | 10 | Humpback Whales |
| 7/19 p.m. | 24 | Blue Whales |
| | 2 | Humpback Whales |
| | 7 | Harbor Porpoise |
| 7/19 a.m. | 22 | Blue Whales |
| | 2 | Humpback Whales |
| 7/18 p.m. | 25 | Blue Whales |
| | 4 | Humpback Whales |
| | 6 | Harbor Porpoise |
| 7/18 a.m. | 26 | Blue Whales |
| | 6 | Humpback Whales |

American Cetacean Society
Monterey Bay Chapter
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