1996

Deep Ecology and Natural Resource Industries: Some Lessons From a Fishing Boat

Christopher J. Preston
The University Of Montana, christopher.preston@mso.umt.edu

Trumpeter (1996)
ISSN: 0832-6193

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For all those who claim to be part of the deep ecology movement, there is a special concern with action. Individuals must do more than develop philosophical beliefs about their relationship with nature; they must act on those beliefs. As Bill Devall and George Sessions have put it in their influential text: "[t]he ultimate norms of deep ecology...cannot be fully grasped intellectually but are ultimately experiential."1 Deep ecology is therefore a philosophy of action; the stress is on praxis.

Unfortunately, it is not always easy to know how to put your beliefs into practice. A commitment to a set of ultimate premises does not automatically generate a precise program of action. It is especially hard to know how to act when the arena you are working in is hostile to your beliefs. Such is the case in the natural resource industries, where the deep ecology approach is often viewed suspiciously as a job-threatening spectre. But resource extraction, occupying the front end of industrialized society's assault on nature, badly needs some scrutiny. At present, the natural resource industries are underdiscussed by many writers supporting the deep ecology movement. Many of the published guides to practicing deep ecology focus on lifestyle changes for individuals and neglect the question of how to restructure deeply entrenched industries. Of the discussions that do address extractive industries, very few attempt to tackle those industries that use resources from the commons.2 As a result, environmentally concerned citizens are often left to sit by and watch while resource extraction is practiced in much the same style as it has been for most of the century, a hit-and-run affair motivated by profit alone.

Commercial fishing is one natural resource industry that has so far almost escaped the attention of the deep ecology movement. In this paper I will bring fishing into the debate. However, rather than write as a supporter of the deep ecology platform making certain recommendations about how fishermen ought to behave, I write as a part-time Alaskan fisherman who is familiar with the platform but anticipates conflicts between the platform and his trade. By reversing the usual direction of critique I hope to emphasize that the practical task of changing the way the industrialized world does business can only be accomplished dialogically. Commercial fishing is especially important (and problematic) because it involves a resource extracted from the commons. But many of the concerns raised here are relevant for other extractive industries, so I hope that these remarks will be of use beyond the fishing boat.

Natural Resource Industries and the Deep Ecology Movement

Natural resource industries present a series of unique challenges to the deep ecology movement. Recognizing the importance of these industries is a crucial first step. Extractive resource industries occupy the cutting edge of consumer

society's relationship with nature. They are the forgotten price of every trip to the mall or the grocery store. Anyone who has seen pictures of an open cast gold mine or visited a clear cut in the Cascade Mountains of Oregon and Washington knows that these industries can do a lot of damage. Many of the methods currently used for extracting resources are extremely problematic for those in the deep ecology movement. Dissolving gold with cyanide, trawling the ocean floor, drift net fishing and clear cutting old growth forests are all methods that can cause significant damage, or totally destroy, an ecosystem. For example, the local crab fishery in King Cove, Alaska disappeared a mere three years after the area was opened up for bottom trawling for cod and flounder. Alternative methods for extracting resources are, in many instances, both necessary and overdue. Thinking about these methods should be a priority for anyone seriously concerned with minimizing the daily damage to our wilder places.

Establishing acceptable methods for extracting natural resources would allow the consumer to take a more pro-active role in determining change. Platform principle #8 of the deep ecology movement states that there is an obligation directly or indirectly to try to implement the necessary changes.3 For every consumer, purchasing power has an important role to play in fulfilling these obligations. This means not just consuming less, but also consuming products taken less destructively from the earth. For this to happen, the consumer needs to know the environmental footprint of her purchase. Certification procedures such as those currently used on organic fruits and vegetables can help consumers make purchases that reflect their moral commitments. But decisions over certification can be complex and require lengthy discussion. For example, in fishing, seining may prove to be an acceptable method for catching salmon, but unacceptable for catching tuna because of the dolphin by-catch.

Extractive industries also occupy an important part of the political territory. Many regions of the country have historical attachments to certain industries that stir deep emotions. Supporters of the deep ecology platform often find themselves a marginalized group in these regions. Loggers and ranchers lament the voices of the "extremists" that oppose the way they make a living. News-making initiatives such as the Wildlands Project can make it appear to loggers and ranchers that their opponents would indeed rather kill people than snakes or grizzly bears. This obscures the fact that a deep ecology approach calls for a society that is more, not less, integrated with nature than the present one. Selective logging and subsistence hunting have an important role to play in any ecological future. The political currency of the deep ecology movement would be enhanced enormously if activists could show that they encourage long-term sustainable extraction of goods from nature and then demonstrate how it could be done.

The challenge of the natural resource industries could be a source of inspiration to those supporting the deep ecology movement. These industries are the hard cases, the difficult nuts to crack. Taking the bus or riding a bicycle to work

is easy. Not supporting the overgrazing of the West by becoming vegetarian is not very much harder. Knowing that the copper bringing electricity to your PC comes to you without destroying a watershed in the Yukon Territories is very much harder to arrange. Telling an extractive industry that you don't like its methods is unhelpful unless you can also suggest methods that you would prefer them to use. There are ways to solve these complicated problems, but they require serious thought and application. Extractive industries face a different set of problems from those activities taking place entirely within city limits. Many in the extractive industries handle pristine nature every day and a chainsaw is a very different kind of tool from a lap top. As long as these challenges are unmet, the deep ecology movement will remain an anathema to large portions of society. Meeting the challenges, however, will prove that the deep ecology movement can accommodate a much broader spectrum of people than it currently does. Consequently, extractive industries have an important claim on the attention of deep ecology theorists.

Contemporary environmental problems have arisen in a particular context and require solutions relevant to that context. Since responses to environmental problems have to be embedded responses, it is not possible to pick a finite set of ground rules that every extractive industry should meet. The deep ecology approach is designed to be flexible. However, Naess's 1973 characterization of the movement and the platform he developed with George Sessions (1984) point towards certain themes that should be prioritized.4 With these parameters in mind I shall discuss three areas where a deep ecology movement approach to commercial fishing runs into difficulties. Since a variation of these problems is likely to occur in other extractive industries, this discussion is intended simply to point to concerns over which promoters of the deep ecology platform and the participants in extractive industries will need to dialogue. These concerns involve the role of global markets, the importance of technology, and the relative benefits of scale.5

Deep Ecology Movement and Commercial Fishing

Whatever used to be the case in fishing, global market mechanisms now play a large role in determining the character of the industry in Alaska. Fish caught in Alaska no longer satisfy only local needs, they have become commodities traded internationally. Alaskan crab, salmon, herring and halibut are often flown further in search of a market than most people on the planet will travel in their lifetime. Much of the higher quality Alaskan seafood, such as sockeye salmon and herring-roe-on-kelp, is sold to Japan, but fish will be moved to wherever the market conditions dictate. Internationally owned seafood processors ensure that all the fisherman has to do is to deliver the catch to the tender and the

processor takes care of bringing the fish to market in whatever form is desired.

The wild fluctuation of market prices - prices of the fishing grounds can fall by more than half in a matter of weeks - means that fishing is essentially opportunistic. Most fishermen will own more than one type of gear so that they can fish for a variety of different markets. The bigger the boat, the less restraints there are on where the fisherman can go to take advantage of the market. For example, large Seattle-based boats are currently exploiting fisheries from the Russian far east to the waters off South Africa. But even the smaller boats that can fish only locally will change their gear to fish for whatever species is currently commanding the highest price. It is only a very few fisheries that are lucky enough to have guaranteed markets with guaranteed prices.

There is nothing unique about how the fishing industry dances to the tune of global markets. Other extractive industries such as the wood products industry do the same. But the market oriented structure of the fishing industry raises several problems for a deep ecology approach. For example, platform principle #3 states that humans have no right to reduce the richness and diversity of life forms except to satisfy vital needs. Yet many of the products of the Alaskan fishing industry are luxury products sold not to satisfy vital needs but to satisfy the palettes of global elites. Little, if any, of the seafood caught commercially in Alaska ends up in markets that satisfy vital needs.6

Global markets are also problematic for supporters of the deep ecology platform because of the distance they create between consumer and producer. This distance inevitably has an effect on the consumer's desire and ability to implement change. A consumer in Kansas City probably has no idea what part of Alaska her sockeye salmon came from. Even if she knows the region the salmon came from, she is unlikely to know anything about the state of the sockeye stock, the health of the ecosystem, or the nature of the local economy. Consequently, it will be hard for her to know whether she is doing the right thing when she makes her purchase. The distance the market creates complicates life for even the most conscientious consumer.

Despite the fact that global markets for luxury products create barriers to a deep ecology approach to fishing, there are a number of reasons why these markets should be protected. Luxury products can play a critical role in keeping some of the smaller fishing operators in business and in preserving the cultural identity of many of the small, Alaskan, fishing towns. For example, Copper River red, an early season, high-value salmon distributed globally, is vital to the survival of locally owned and operated bowpickers in Cordova, Alaska. Few of the fish are used directly to satisfy local needs, but the sale of the fish in Seattle and Japan give the town its best chance of economic survival. After several poor years, 1996 provided a bumper year of large fish for Cordova gillnetters bringing a moderate, albeit temporary, prosperity back to the town. Should the market for Copper River Red suddenly end there are only two real economic options available to Cordova: one is to push a road through the Copper River Delta -

one of the largest untouched estuarine wetlands in North America - and open the town to a flood of RV's from Alaska's burgeoning tourist industry, the other is for the Native Eyak Corporation to increase its logging of the virgin Sitka spruce and Western Hemlock stands of Prince William Sound. Paradoxically, a stable global market for salmon can be better for the ecosystem and for the community than an unpredictable local one.

A second reason not to dismiss global markets for luxury products is that some of the luxury product fisheries are the most biologically sustainable of all. Non-local markets do not inevitably lead to the extinction of local species. Although some poorly managed luxury product fisheries, such as the Bering Sea king crab fishery, have seen precipitous declines in recent years, others have proved able to sustain large catches over extended periods. The Bristol Bay sockeye fishery is at least as productive today as it has ever been. Provided escapement goals are met each year before the fishery is opened, there is every reason to believe that Bristol Bay will continue to be both economically productive and biologically sustainable. There is clearly a greater financial incentive to manage high value fisheries carefully. The emphasis in the deep ecology movement on satisfying only vital needs and keeping economic activity local simply fails to appreciate the positive cultural and ecological role that global markets and luxury products can play in the natural resource industries.

A second important feature of the deep ecology movement is a cautious attitude towards technology. Naess, Sessions, Devall, and neo-pastoralist Wendell Berry have compiled lists of questions that should be asked of a technological device before it is adopted for use by a person subscribing to the deep ecology platform. Questions designed to eliminate undesirable technologies include: Does this technological device serve vital needs? Does this device foster greater autonomy of local communities or a greater dependency on some higher authority? Is this device conducive to a deep ecology lifestyle? Does this device encourage citizens to behave or think like machines? Can this device be easily understood by non-experts and serviced locally?7 Much of the technology on board a modern commercial fishing vessel would fail this test. The wheelhouse of a modern fishing boat is full of advanced electronics including satellite distress and communication systems, navigation aids and sonars. These are not systems that can be immediately understood by non-experts, nor can they be repaired and maintained locally. In addition, a fisherman programming a computerized navigation aid acts more like a machine than a human, following an instruction book to punch in the numbers at the right time. The fact that fishing has been going on for millennia suggests that very little of this technology is essential to process of catching fish.

Technology has also changed the size and shape of boats. Stronger and lighter construction materials open up more space for fish catching technology and for creature comforts ensuring that boats can fish safely in worse weathers than ever before. On board refrigeration systems allow fishing boats to stay at sea

for longer before having to deliver fish to the processor. Enormously powerful hydraulic systems have made the task of bringing fish aboard a matter of pulling the right levers at the right time and staying within the technological specifications of the boat, thus increasing the catching efficiency of even the smallest of boats. But the hydraulic systems also increase the amount of toxic material on board that spills into the ocean if a hose wears out or a seal blows. Deckhands on fishing vessels cannot escape the constant thrum of diesel engines and piercing whine of hydraulic motors. Hence it might seem that advances in fishing technology are incompatible with a lifestyle supporting the deep ecology movement.

But technology also plays a important role in making fisheries more sustainable. Innovations in trawling nets have reduced the by-catch in many groundfish operations. Navigational technology decreases the likelihood of lost longlines or crab pots that would otherwise serve as eternally self-baiting, ghost traps. Technology also plays a critical role in the regulative side of Alaskan fisheries. Computer modelling of fish populations give marine biologists a better idea of how many fish can be sustainably harvested. Computers also help to administer quota systems that determine allocations of fish species to particular boats. Two years ago Alaska adopted a quota system for halibut that greatly reduces the cod and rockfish by-catch of the previous system. The use of float planes by fishery managers means that aerial surveys for herring or salmon can be made daily to determine quotas and to spot boats that are violating regulations. More efficient engines and more hydrodynamically shaped hulls can reduce the consumption of gasoline and diesel by both fishermen and law enforcers alike.

In addition to its uses in the regulation of fisheries, technology has offered huge safety benefits to fishermen. Automatically deploying life rafts and satellite distress systems known as EPIRB's mean that a fisherman can be in a life raft with a helicopter on the way even if the boat capsized before there was time to send out a mayday call. Benefits such as these are unlikely to be put up for negotiation by fishermen who might want to adopt a deep ecology approach. The questioning of technology that the deep ecology movement recommends is a one-sided account because it fails to adequately consider some of the issues that are peculiar to a dangerous, extractive industry. If fishermen adopted only the technologies that meet the criteria suggested by Devall, Sessions, and Naess, fisheries would certainly become more dangerous and would likely become less, rather than more, sustainable.

Finally, there are important questions about the relative benefits of scale. The deep ecology movement shows a preference for the small scale over the large on the grounds that small operations are more conducive to local autonomy, they have less impact on ecosystems, and they help to preserve cultural identity. Indeed this is sometimes true. The environmental damage caused by enormous, corporately owned catcher-processors that drag the ocean floor and return to port periodically only to refuel, deliver fish, and re-crew is now sufficiently well

documented to make these kinds of operations totally unacceptable to anyone concerned with the health of ecosystems. Factory-trawling is the ocean equivalent of clear cutting a forest. In addition to the direct damage trawling causes to ecosystems, it also causes indirect damage to local cultures by putting the smaller, in-shore operators out of business. In this case the small scale is clearly preferable to the large.

Unfortunately, small is not always beautiful in commercial fishing. Small, locally owned fishing boats can be equally disruptive to fish populations. For the last three years the herring-roe-on-kelp fishery in Prince William Sound has been shut down because of declines in the herring population. One of the suspected culprits for the decline is overfishing by local fishermen in an inadequately managed fishery.8 Small in-shore operations can also be less desirable than larger off-shore operations because of the cumulative impact of having many more vessels in a particular area. The noise of propellers churning the water near to coastline disrupts the feeding and breeding patterns of marine mammal and avian populations. The fuel burnt for each fish caught is up to three times greater for small boat operations than it is for factory trawlers.9 The cumulative effects of large numbers of small spills of toxic materials such as hydraulic oil, bilge water, bottom paints, and cleaning chemicals is also significantly greater with a large number of small boats operating in a restricted area than with one or two larger boats fishing off-shore. Consequently, the benefits of small scale operations such as higher employment, greater local autonomy, and the possibility of greater sustainability have to be carefully weighed against several ecological disadvantages.

Markets, technology, and the relative benefits of scale present several bones of contention for a fisherman trying to practice in support of the deep ecology movement. Not only are some of the recommendations made by the deep ecology supporters dramatically at odds with current practices, but in some cases if adopted they would result in fisheries becoming more, rather than less, ecologically damaging. It is likely that other extractive industries face similar concerns. For example, in forestry, taking a few Port Orford cedars for a high value-added use such as violin construction may be better for the remaining trees than using a larger number of them to satisfy the vital building needs of a nearby community. In oil and gas exploration, satellite and computer technologies can reduce the amount of wells that need to be sunk by making each well more accurate and efficient. Rejecting these technologies on the grounds that they are centrally controlled or manufactured in other parts of the country does not seem prudent. In an extractive industry like mining, building one huge copper mine might in some cases be preferable on ecological grounds to building several smaller ones. It is clear that natural resource industries demand some difficult decisions and compromises from deep ecology movement theorists.

Objections and Responses

There are several concerns that should be raised about the account I have been offering. The first concern is about language. I have maintained throughout an anthropocentric vocabulary, referring frequently to natural "resources," their best "management," and the methods for their "extraction." It is clear this language defers to the very instrumentalism towards nature that is being questioned. It will be argued that anyone who still talks of the natural world as supplying "resources" solely for human use is really missing the point. The language choice is deliberate, however, because the language of the extractive industries currently is anthropocentric. To use an ecocentric vocabulary would alienate the very resource extractors that deep ecology followers are trying to persuade. It is a fact that very few fishermen or fishery managers currently adopt an ecocentric approach and if this approach is to be nurtured it must couched in terms that are familiar rather than threatening. The goals, after all, are practical ones.10

A second response might be to claim that the problems I describe indicate only that natural resource industries such as fishing are totally unacceptable as currently practiced and not that the deep ecology movement needs to be more responsive to the difficulties fishermen might have with it. This non-compromising attitude should be also be resisted. The philosophical reason to resist reflects the Deweyan belief that philosophical problems begin with actual problems in the world. The deep ecology movement is a response to concrete environmental problems and an approach to fishing must start by dealing with the situation as it exists in fishing today. There is also practical reason to adopt a dialogical approach to these problems. At present, the deep ecology movement does not realistically address the major issues in fishing. If you take the deep ecology platform to most fishermen today and ask them to change, they would laugh and complain (with justification) that the platform is insensitive to their particular situation. An approach to the deep ecology movement should involve a situated questioning. If this approach is to be a viable alternative for resource extractors, it has to be worked out in their company. Most progress is made in this way. The Ecoforestry Institute, a group that supports the deep ecology movement in forestry, was formed only after theorists familiar with the platform sat down with foresters interested in applying the principles and hammered out the problems and practices specific to logging.11

Although this paper is not intended to be a policy paper, I will close by suggesting several policy directions that might begin to promote the deep ecology platform in fishing. Clearly, biological sustainability has to be a priority. Global markets can play a key role promoting sustainability as long as trade arrangements are first evaluated for their potential to enhance or diminish the resource. Thinking must be long term and err on the side of caution. Consideration should be given not only to biological sustainability but also to market sustainability. Emphasis should be placed on how to make market prices more reliable rather

than on how the market can offer the most dramatic profit. Reliable markets can make fisheries more sustainable since there is the time and incentive to work out effective regulatory measures. It is likely that in some cases reliable international markets for luxury items will be preferable to a fluctuating market for lower value resources.

Technology should also be questioned but mainly with regard to the ecological benefits of the technology and not over issues such as whether the technology is locally produced or not. Electronic navigation systems are simply not made in Alaskan coastal communities. The ecological and safety benefits of some satellite and computer technologies far outweigh the fact that the satellite may be maintained by NASA from a tracking station thousands of miles away.

With common property resources there is an urgent need to foster some kind of accountability to place. If resource extractors have a responsibility to place, either because the place is their home or because they are bound to return there to work year after year, then they are much more likely to consider the ecological health of the ecosystem. A relationship to place that is fully authentic to the deep ecology movement would require that resource extractors find more than an instrumental connection to the place they work. An artificial version of this relationship could be constructed initially by means of permitting procedures that tie fishing boats into certain regions. Although this legalistic connection with place is hardly ideal, as a stop gap measure it would be effective in generating a concern for the health of the ecosystem, and it might in the long run foster a more authentic spiritual connection.

Responsibility to place can also be nurtured if fishermen participate in the co-management of their fishery. Alaskan fishermen are currently involved in an antagonistic relationship with the Alaska Department of Fish and Game, the agency responsible for regulating their industry. In the Lofoten fishery of Northern Norway, fishermen are jointly responsible with the government for the management of the resource.12 Fishermen help make the decisions about what gear types are acceptable and about what quotas to set. Each year several fishing boats are paid not to fish but to patrol the rest of the fleet and enforce the regulations. The Lofoten fishery has seen no decline in productivity in the 70 years that the co-management system has been in operation, making it currently one of the few sustainable fisheries in the world.

Ritual can also play a role in fostering the development of support for the deep ecology movement to extracting resources. Dolores La Chapelle has stressed the importance of ritual to the ecological life.13 Ritual certainly has a place in modern fishing. In many Alaskan fisheries, a fishing day opens with an ugly scene of boats jockeying for position with engines roaring and crew members yelling. Traditionally, fishermen kissed the first fish of the season and returned it to the ocean. It would be relatively simple to arrange symbolic first sets in which selected boats released some fish back to the ocean as a gesture of acknowledgment and respect. Fishing towns could also participate in small festivals at

the beginning and end of each season. Fishermen are already lucky enough to have more of a connection to natural cycles than most workers. Finding ways of enhancing this connection through ritual would help to instill in fishermen a feeling of what Holmes Rolston calls "storied residence" and assist in fostering the necessary attachment to place.14

If fishermen and fishery managers voluntarily adopt some of these changes and are forced by the right kinds of regulations to adopt others, then it is likely that the industry will start to move in a direction compatible with the deep ecology movement. Unfortunately, fishing has a long way to go to reach even the lesser goal of biological sustainability. To be a practice that genuinely accords with the deep ecology platform, fishermen would also have to develop philosophical and spiritual norms that govern how they come to their work. These, of course, can not be regulated into existence. However, because of the kind of lifestyle and engagement with nature that fishing and many other resource industries involve, these kinds of attitudes may not be so far under the surface as it might at first seem. Resource extractors enjoy a rare connection to nature through the seasons and the weather that can be a generative source for ultimate premises that can support the platform.

Applying deep ecology platform principles to the practices of extractive industries is a challenging process. But appropriately contextualizing each practice remains of the highest importance. Fishermen and other resource extractors would do well to reflect on what kinds of contexts these are as they carry out their work. Deep ecology movement theorists and other environmental activists can assist them by recommending directions for change that speak to the peculiarities of the job. Only with this more cooperative, dialogical kind of approach will the challenge of applying ecocentric principles to the natural resource industries be successfully met.

Notes

1. Bill Devall and George Sessions, Deep Ecology: Living as if Nature Mattered, (Salt Lake City, UT: Peregrine Smith Books, 1985), p. 69.

2. Agriculture and forestry are the industries that have received the most attention from deep ecology movement theorists. However, most of the progress that has been made in these discussions has been restricted to activities on privately owned farms and woodlots. Privately owned lands are less problematic than the commons and corporate lands because personal ownership generates more obvious incentives to protect the health of the resource.

3. "Platform Principles of the Deep Ecology Movement," in Devall and Sessions, p. 70.

4. Arne Naess, "The Shallow and the Deep Long-Range Ecology Movement: A Summary," Inquiry, #16, (1973, pp. 95-100, and Naess & George Sessions, "The Deep Ecology Platform," in Devall and Sessions, pp. 69-73.

5. I should make it clear that my choice of these three themes is inevitably somewhat arbitrary. However, from a fisherman's point of view, these are three areas that, if they came up for discussion, have particular potential to cause friction.

6. Alaskan residents with subsistence permits can keep some of their commercial catch for domestic consumption but this amounts to just a tiny fraction of the overall catch. When markets are saturated there are some charities that distribute unsold salmon free on the streets of Anchorage and (more recently) Seattle. These are fish that have no market and would otherwise be dumped at sea.

7. Devall and Sessions (1985), p. 35 and Arne Naess, Ecology, Community, and Lifestyle: Outline of an Ecosophy, translated by David Rothenberg (Cambridge, U.K.: Cambridge UP, 1989).

8. I should stress that the causes of declines in fish populations are notoriously difficult to track since so many of the variables are unknown.

9. See State of the World, L. Brown et al., (Washington D.C.: Worldwatch Institute 1995), p. 26.

10. Lying behind this reply is the complex and divisive issue of how much ecocentrists should compromise to meet their goals. Though I can offer no answer to this, I can say from personal experience that, at the moment, ecocentrism is for the most part unwelcome among fishermen.

11. The Institute recommends a practice it calls All-Age Multiple-Species Management as a viable approach to forestry. Details are available from The Ecoforestry Institute of the U.S., 785 Barton Road, Glendale, Oregon 97442.

12. See "Fisherman's Co-management: The Case of the Lofoten Fishery," Human Organization, vol. 48, #4, 1989, pp. 355-364.

13. Dolores La Chapelle, "Ritual is Essential," In Context, #5, 1984.

14. Holmes Rolston III, Environmental Ethics: Duties and Values in the Natural World, (Philadelphia, Pa.: Temple, 1988).

Citation Format

Preston, Christopher (1996) Deep Ecology and Natural Resource Industries: Some Lessons From a Fishing Boat *Trumpeter*: 13, 4. http://www.icaap.org/iuicode?6.13.4.5

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