

# Policy Matters

Newsletter of the IUCN Commission on Environmental, Economic and Social Policy

## THE STURGEON

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Issue no. 8  
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**IUCN**  
The World Conservation Union  
**CEESP**

Commission on Environmental,  
Economic and Social Policy



# On sturgeon and the new character of CEESP

M Taghi Farvar

This issue of Policy Matters offers to the Commission members and the IUCN constituency at large a glimpse of what the Commission is engaged to be: focused, concrete, relevant, multi-disciplinary, collaborative and clear. We dedicate our first issue in the new CEESP to an urgent conservation issue with great economic and social implications – the severe decline of sturgeon populations in many waters but especially in the Caspian Sea (traditionally the supplier of over 90% of caviar in the world, and the best species for its production). There are four main causes for this impressive and alarming decline. The first is over-fishing and illegal fishing, a symptom of poor management. The second is habitat destruction, especially because of blocked rivers and waterways linking the open seas to inland spawning grounds. The third is environmental pollution – mostly because of urban, industrial and mining effluents and waste. The fourth is the presence of competing alien species, for instance the *mnemiopsis* jelly fish that was introduced a few years ago from the Black Sea in the ballast water from oil tankers visiting the Caspian. Several of the articles in this issue illustrate these problems in great detail. These and other articles, also illustrate the possible solutions. There is no magic wand, but we understand the building blocks of what the solutions would look like.

One of those building blocks is the rehabilitation of the sturgeon species and the restoration of their habitats. The mass release of fingerlings of endangered species, the freeing of the waterways between the sea and the spawning grounds are crucial steps in this, as is the drastic curbing of pollution sources. None of these, however, is likely to produce significant results in the short run without bracing for a very long moratorium on sturgeon fishing, especially for the endangered species, to last at least for a couple of decades, which is the period of time required for small sturgeon to reach full maturity and reproductive age. It should be noted that while there may be apprehension in some of the governments about such a drastic measure given the competitive international environment (in the meantime, some of the aquaculture farms in Europe and elsewhere are likely to produce more caviar than some of the Caspian states), there is no choice about the measure. Damage is already done, and without these measures the sturgeon fishery will be lost anyway. In addition, we have no doubt that once the sturgeon population of the Caspian is rehabilitated, Caspian Caviar can easily find its international market place once again. CITES must impose this long-term moratorium, or we must all face the more unpleasant option of losing some of the earth's most wondrous evolution.

Another building block is effective collaborative management agreements and organisations at different levels interlinked and nested among each other as appropriate. Locally, they should involve the fishing communities, the traders and the municipal authorities. Nationally and regionally, they should involve, for instance, all Caspian states. A regional body could develop agreements on fishing quotas, protection measures (including an effective and long-term moratorium on endangered species) and very strict controls on poaching and exports. Internationally, they should spell out equally strict regulations and supervision by CITES. Non-governmental organisations could help and in fact could play a crucial mediating and communication role at all levels.

A cornerstone of the approach would be assuring fair management rights and responsibilities to the local fishing communities. Rights would include access to fisheries as common property resources and recognition and upholding of indigenous knowledge and traditional sustainable management practices (with the necessary adjustments for technological change). Responsibilities would include the respect of regulations as well as the surveillance of such respect on the part of others. Another cornerstone would be sufficient investment in social communication (i.e. widespread social dialogue on the problems and opportunities around the conservation of sturgeon species) and training and appropriate technologies (such as sturgeon culture to take pressure off the wild and promote the sustainable livelihoods of fishing communities).

Much needs to happen for the cornerstones and building blocks to start piling up and working synergistically. We can begin, however, from some community demonstration initiatives, dialogue among relevant neighbour states (for instance around the legal regime of the Caspian) and extensive social communication initiatives (which are much more than conventional environmental education). In all this, the IUCN, its members and its Commissions can play a major role. Our task is to clarify, propose, promote and assist. All of this we are doing, and the special issue of Policy Matters you have in your hands is a tool to these ends.

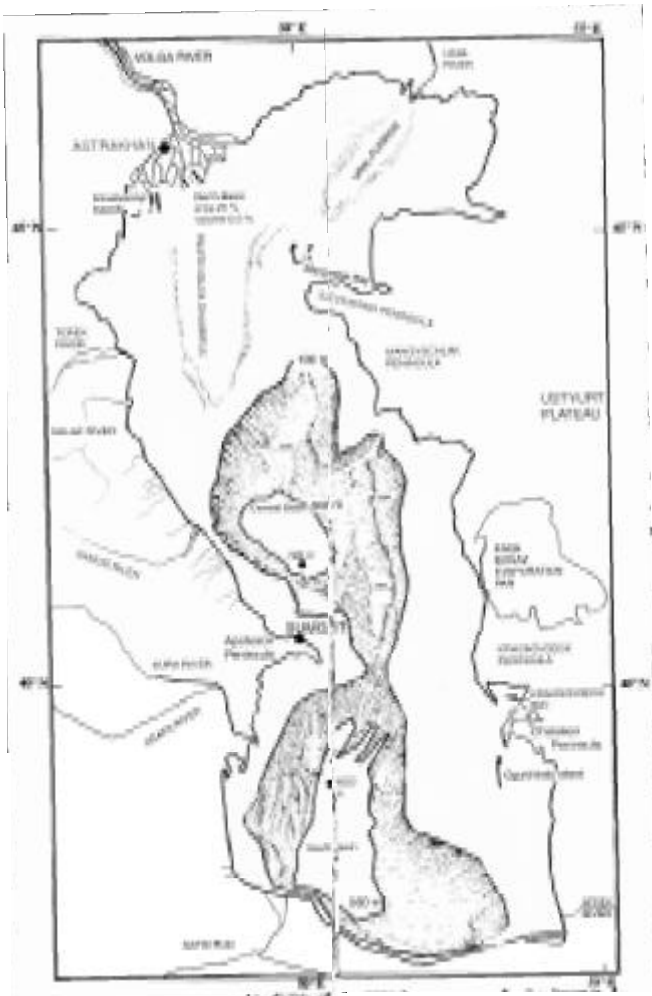
This is the first issue of Policy Matters that I coach to print as the new Chair of CEESP. I am honoured to have been chosen by both the CEESP members and, later, the IUCN Council. And I am delighted that the Amman World Conservation Congress has stressed once again that the Union needs the support of its dedicated body uniting professionals in environmental, economic and social policy. Following the CEESP Resolution approved in Amman, we have restructured the Commission along four major lines of work: collaborative management, sustainable livelihoods, environment and security, and environment, trade and investment. To each line of work corresponds a Working Group, i.e. a subset of the CEESP membership with particular concern, experience and activity. I would like to offer our thanks to all the working groups, and single out the oldest among them for a word of appreciation: the Collaborative Management Working Group (CMWG), whose Newsletter (*CM News 5*) is attached to this issue of Policy Matters. A glance at the newsletter will give a sense of the breadth and scope of the concerns and experiences of CMWG and its membership. The other Working Groups, although mostly new, are also very active, drawing from prior regional initiatives and the solid experience of their Chairs and members. All four groups have helped produce this issue. For a better view of what the working groups are doing, please consult our new web-site (still under construction, but able to give you a sense of the main activities). Point your browser to [www.iucn.org](http://www.iucn.org), then to Commissions, CEESP, or go directly to <http://ceesp.cenesta.org>. You will see there, as we hope in this new version of Policy Matters, what we are attempting to be: focused, concrete, relevant, multi-disciplinary, collaborative and clear.

*continued on page 27...*

# Caspian Rhapsody

Henri Dumont

Ecosystems show vulnerability and resilience at the same time. They suffer under environmental insults, but they are also capable of absorbing a considerable measure of attack without collapse. As soon as the attack ceases, they return more or less to their original state. Paul Ehrlich devised the well-known rivet-popping analogy to capture this phenomenon: a wing plane is kept in place by a large number of rivets. The loss of one rivet is of no great consequence to the wing. If two and three go, the wing will likely still resist. But if the process continues, eventually one critical rivet will be lost, the wing will brake off, and the plane will crash. It is likely that not all rivets are equally important in keeping a wing intact. How many and which of them can be sacrificed is generally unknown. Ecosystems function in much the same way. One may knock out many components (species) and see little or no change. But then, all at once, some key species is lost, and the system may fall to pieces.



The Caspian is the largest system of land-locked water in the world. Compared to most other lakes, it has great age, dating back to about the middle of the Cenozoic. The environment around it, and the lake itself has greatly fluctuated over time, as reflected in a variable lake

level, salinity, and occasional connections with the Black and Aral Seas, and with the world ocean; but this has not prevented local evolution. Evolution led to the appearance of local species, and these endemisms reached the level of endemic genera and families in many groups of animals, especially in crustaceans and molluscs. It is estimated that up to 400 species, in different orders of bivalves, gastropods, amphipods, copepods, mysids, cumaceans, decapods and onychopods are unique to the Caspian. Taken together, these invertebrates probably represent an essential compartment of the lake's ecosystem, equivalent to an entire wing in the plane analogy.

Molluscs and crustaceans together form the intermediate trophic level, that links primary production and part of the decomposition cycle to the vertebrates: fish and seal. Most are small and rather inconspicuous; their immediate economic value is not obvious. Only some molluscs are large, their shells lining the beaches, and thus they are at least better known to man.

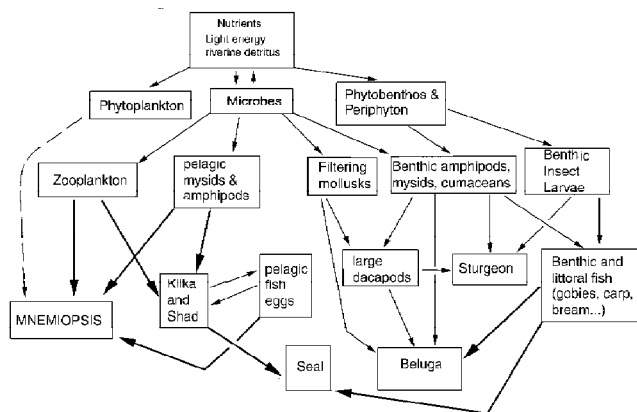
The lake's fish diversity is rather high. The pelagic space is populated by schools of species of clupeids, collectively known as *Kilka*. The kilka is exploited both by man and the Caspian Seal. It was, until recently, the only resource of the lake that was not overexploited.

There are five species of sturgeon. One of which occurs in two geographic subspecies. Three are exploited lake-wide. The Persian sturgeon is exploited mainly in the South. The Sturgeon is a slow-growing fish that attains large sizes. It has a long lifespan. The Beluga, with its recorded maximum age of 100 years, a size of over six meters, and a weight of several tonnes, is among the world's largest fish. This group of primitive bony fish that developed a cartilaginous skeleton, requires a huge water mass to feed and develop. Therefore, many species spend most of their lives in the sea. Like salmon, they only return to their native rivers to mate and spawn. The Caspian, with its size of 400,000 km<sup>2</sup> is, for all practical purposes, a sea. There are enough major rivers, like the Volga, to allow sturgeon to complete their lifecycle successfully. Historically, the numerous Caspian crustaceans and molluscs offered the small bottom-feeding sturgeon a wide choice of food. As a result, the Caspian used to be teeming with sturgeon.

Sturgeon meat is firm and tasty. Originally the fish were exploited for their meat. The **ikra** better known as **caviar** was the food of poor fishermen. Caviar, which may be up to ten percent of a full-grown female's body weight, was soon discovered to be a delicacy and became a valuable export product. Eventually the Caspian came to represent 90 % of the world's caviar market. Well into the twentieth century, revenues from caviar matched those of oil, which was primarily exploited in Azerbaijan, and to a lesser extent in Kazakhstan.

The twentieth century will probably be remembered as the century during which a staggering amount of natural resources were squandered. This is certainly true of the Caspian sturgeon in spite of

# Caspian Rhapsody



the several waves of protection measures. Initial drops in the catch were remedied by banning pelagic (in-lake) fishing. Russia established a breeding in captivity program, after river damming had destroyed most of the sturgeon's natural spawning grounds. Many millions of the fingerlings were restocked to the lake by the program. Azerbaijan and Iran joined this effort, with Iran currently being the most active.

Since the 1970s poaching and industrial water pollution have been the main culprits in the steady degradation of stocks. By the mid 1980s, the commercial catch had declined to 25,000 tonnes per annum, and continued to drop by some 1,330 t y<sup>-1</sup>. After the collapse of the USSR in 1991, all Soviet era regulations collapsed. The sturgeon ranks amongst the victims of this collapse. Unrestrained poaching is estimated to have aggravated the yearly erosion of the catch by 4,300 tonnes y<sup>-1</sup> (Figure 1), starting between 1992 and 1993. This poaching effect almost halved the catch. Later, the rate of decline dropped to 930 t y<sup>-1</sup>, suggesting that, for the same catch effort, yields have consistently decreased. Extrapolating the old and new curves linearly to zero suggests an extinction of commercial catch in 2002 and 2001, respectively. This is a sobering conclusion. Even without the poaching, the resource would have become unexploitable; albeit one year later. Exports of poaching-derived caviar probably peaked between 1991 and 1993 as illustrated by the amounts seized in French airports (Figure 2). As of 1994, the resource apparently became too rare for export, even illegally.

It should be stressed that a zero commercial catch is not the equivalent of biological extinction. Limited populations will survive in the lake. They might eventually die out. The artificial restocking may extend their agony or recovery for an indefinite period.

Although large and powerful, the sturgeon is a remarkably docile fish in captivity, and is easy to reproduce. Without these qualities, they would have been extinct in the Caspian region several decades ago. Whether the Caspian will ever recover its prominence as a supplier of caviar is questionable. The moratorium on sturgeon fishing that was installed last year is, unfortunately, unlikely to change that. All across the world, the private sector has begun to set up sturgeon culturing facilities. With an original goal of selling small sturgeon as ornamental fish, the focus has now shifted to producing aquacultured caviar. The Siberian sturgeon, a fully riverine species with a comparatively short life cycle, is the

species of choice. Annual production, if still modest, is rising steadily. Culturing sturgeon in warm water strongly accelerates its growth. In the southwestern France, it is possible to grow Siberian sturgeon to a weight of 2.5 kg in one year; in the Astrakhan area, three years are required to achieve the same weight.

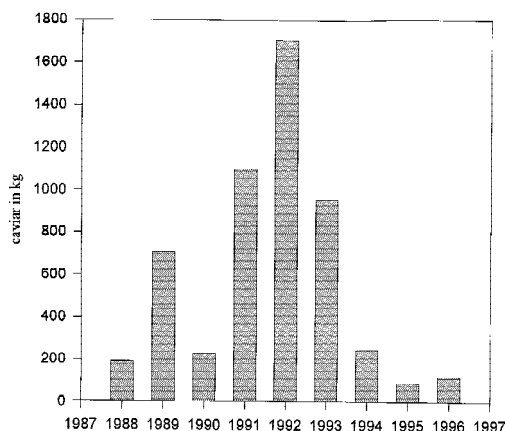
Sadly, Caspian sturgeon will thus be unable to compete with sturgeon produced elsewhere. It seems that Caspian-derived caviar will remain of marginal commercial importance forever. Perhaps, the remaining natural populations of sturgeon will benefit from this.

Even if the sturgeon were to completely die out, the Caspian ecosystem would probably not change greatly. Perhaps its prey, crustaceans, molluscs, and small fish would increase somewhat in abundance. This, however, is not true of the effects of a recent newcomer to the lake, the comb jelly *Mnemiopsis leidyi*.

The story of its invasion in the Black Sea with ballast water from North American estuaries is by now a classic. First spotted in 1982, it culminated in 1988 at a fresh biomass of 3 to 5 kg m<sup>-2</sup>. In 1995, I warned that unless stringent measures were taken, it would sooner or later cross the Volga-Don canal, and would find the Caspian even better to its liking than the Black Sea.

In November 1999, divers off the coast of Kazakhstan simultaneously spotted specimens of the true medusa *Aurelia aurita* and of *Mnemiopsis*. *Aurelia* vanished again, but by the end of 2000, *Mnemiopsis* became engaged in a phase of exponential increase, reaching a biomass of 150 g m<sup>-2</sup>. The animals, a little smaller than in the Black Sea, form swarms that swim around looking for food. Apparently, where they appear, fish vacate the area, and thus kilka catches started dropping even before *Mnemiopsis* was omnipresent. The food of the comb jelly consists of about everything it can catch, including zooplankton and the floating eggs of kilka. It is thus capable of inflicting a double blow to kilka: by competing for the same resources, and by preying on its egg. By late 2001, the Caspian will be emptied of the main pelagic crustaceans, the onychopods, and *Mnemiopsis* locally overshot a biomass of 1 kg m<sup>-2</sup>, an amazing growth rate. The endemic plankton is composed of naïve, slow swimming creatures,

Fig. 2 . Illegal caviar seized in France (source: World Customs Organisation)



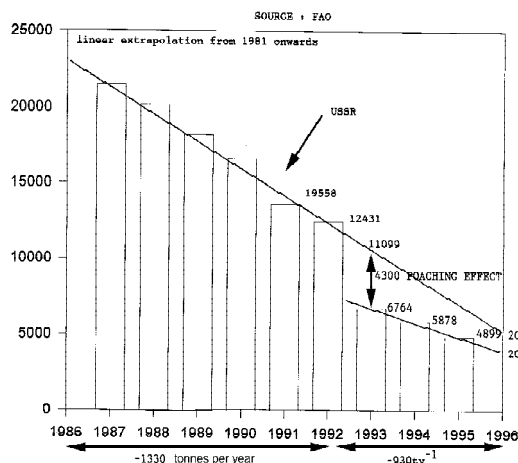
## Caspian Rhapsody

and their demise under the pressure of an efficient, voracious predator was easy to predict. Other groups will follow, in principle all crustaceans that venture into the water. But the kilka will also collapse. As in the Black Sea, many fisherman will soon be out of work.

Finally, the Caspian Seal, a true flagship species dependent for its food on kilka, will be the last domino to fall. The way things stand, it looks like major effects will begin to occur in 2001, and in 2002 they might reach catastrophic proportions. In April 2001, a meeting was called by the GEF and TACIS in Baku to discuss measures to be taken. A consensus was reached that only the introduction of a predator of *Mnemiopsis* was an option. What predator to choose was a difficult question. Ideally, one should look for a win-win situation: if the introduced predator were a fish, capable of being exploited by man, jelly would be usefully transformed into fish. Unfortunately, no fish is currently available that has been well enough studied to be without risks, and therefore the only candidate left was another, larger comb jelly, *Beroe* sp. This species successfully invaded the Black Sea in the late 1990s, and almost instantly a drop in *Mnemiopsis* was recorded. On the minus side, however, it should be noted that one jelly is replaced by another, neither of any use to man. The threshold set for initiating the legal and practical procedure for implantation, 0.5 kg of *Mnemiopsis* per m<sup>2</sup> has meanwhile been reached and superseded. It is high time to act, if we want to save the Caspian ecosystem.

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Fig. 1. Sturgeon catch in the Caspian sea (in metric tonnes)



## Pollution in the Caspian Sea<sup>1</sup>

### Pollution Impacts

The productivity of the Sea is influenced by water temperature, salinity and nutrient content. The organic matter and phosphorous and nitrogen (nutrients) of the Sea is derived almost exclusively from its tributaries, which carry domestic, industrial and agricultural effluents. Organic matter and nutrients either provide food for basic organisms (plankton, zooplankton and zoobenthos) or degrade. Degradation of organic compounds consumes oxygen, reducing the water's oxygen content.

Oxygen depletion in the bottom water causes the death of bottom-living animals, which are often the food for higher organisms and part of the fish food chain. More widespread oxygen deficiency may also directly cause fish mortality. Greatly depleted oxygen levels result in nearly the complete removal of higher orders of life (fish) from the Sea, and would thus be commercially disastrous.

A fall in nutrient levels, since the break-up of the Soviet Union, has led to reduced economic activity. This appears to have stabilized at the lower level and the effects are diminished. Provided the influx of nutrients does not increase again, it is assumed that the risk of damage from eutrophication will not be serious. Likewise, provided that new sewerage schemes include the appropriate effluent treatment works, regenerated industry adopts modern waste standards, and agricultural discharges are controlled, there should be a reduced risk from eutrophication of the Sea.

Hydrocarbon products enter the Caspian Sea naturally from the erosion of rocks and emissions from seabed mud volcanoes. Coastal oil production facilities that have been flooded by the recent rise in the Sea level attract considerable interest. While locally significant, they are of minor significance in terms of the overall pollution of the Sea.

Pollution hot spots are the mouths of the Volga, Kura and Ural, the Absheron peninsula and large towns such as Baku, Makhachkala and Izberbash, where hydrocarbons have accumulated in bottom sediments. In the future new hot spots could develop at the border between the Northern and Middle Caspian, along the so-called Mangyshlak outfall.

### Pollution sources

The main sources of pollution are the various anthropogenic activities common all over the world. Centres of population inevitably generate discharges of organic matter, heavy metals, hydrocarbons, and toxic chemicals. These waste products of human and industrial activities concentrate in the rivers draining into the Caspian to create BOD loadings in excess of the potential for natural degradation, and often compounded by additional input from offshore oil production installations. Apart from such more or less

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<sup>1</sup> Taken from Caspian Environment Programme. For a complete overview visit: <http://caspienenvironment.org/pollution/menu3.htm>.

## Pollution in the Caspian Sea

obvious point sources, there are also other, more diffuse, sources of pollution such as run off from agricultural land (containing fertilizers and pesticides), leaching from landfills, contaminated sites and others. The table shows the overall pollution load to the Sea from the main sources investigated to date.

**Total pollution load to the Caspian Sea**

|                | <b>BOD</b> | <b>N</b> | <b>P</b> | <b>E.Coli</b>           | <b>Oil</b> | <b>Hg</b> | <b>Cd</b> |
|----------------|------------|----------|----------|-------------------------|------------|-----------|-----------|
| Sources        | T/y        | T/y      | T/y      | 10 <sup>15</sup><br>C/y | T/y        | T/y       | T/y       |
| Rivers         | 641000     | 827000   | 88000    | 145000                  | 75000      | 14        | 141       |
| Municipalities | 80000      | 24000    | 6000     | 5000                    | 19000      | 1         | 2         |

### Pollution levels

#### Toxic substances

Untreated wastewater and toxic persistent and bio-accumulating substances from industry, and agriculture are either discharged directly into the Sea or indirectly through rivers and drainage systems. Analysis of the concentrations in the Sea and sea sediments of toxic substances is so far inadequate to provide a comprehensive description. However, it is known that the greatest concentrations are likely to be found close to major coastal industries (e.g. the Absheron peninsula in Azerbaijan) and the mouths of rivers which have mining, chemical industries and agriculture on their catchments.

Routine monitoring by responsible institutions includes analysis of toxic substances in only some areas. Localised investigations by oil exploration companies in Azerbaijan and Kazakhstan waters have generally found low levels of toxic substances in the sediments. Investigations by the University of Moscow in the Volga and Kura estuaries have not found particularly high levels of contamination, but these investigations have not been comprehensive. Investigations around the Absheron peninsula into the extent of mercury contamination have found high levels of contamination in sediments off the Sumgait area.

#### Nutrients

Eutrophication in parts of the Sea may be a substantial risk due to high discharges of nutrients to some coastal waters from rivers and domestic and industrial wastewater. The biological response to high levels of nutrients can be assessed by observing the levels of chlorophyll-a. High levels of chlorophyll-a are indicative of high levels of phytoplankton. High levels of phytoplankton may cause oxygen deficiency as dead phytoplankton in the bottom water degrades. Existing monitoring programmes do not measure the total loads of nitrogen or phosphorous discharged to the Sea. Furthermore, no routine measurements of chlorophyll-a are made, so it is difficult to assess eutrophication risks in the coastal areas. The shallow waters off the Volga delta appear to be most at risk. However, the risk cannot presently be quantified.

#### Radio-nuclides

The seawater is not routinely monitored for the presence of radio-nuclides. Nonetheless, specific coastal industrial activities indicate that health risk from the presence of radio-nuclides in the Sea and sediments, resulting from drilling and nuclear industries, may exist in some areas.

#### Oils

Although oil production facilities in obviously poor condition and extensive on-land oil pollution are some of the most visible environmental issues in the Caspian region, it is unlikely that oil pollution of the open sea is an important issue. In local areas such as Baku Bay there is considerable oil pollution of the water body and sediments.

Techniques used in the CIS countries for routine analysis of oil concentrations in water and sediments are inaccurate and unreliable; they may over-estimate concentrations by up to two orders of magnitude. An analysis of the relevant importance of all potential sources of contamination indicates that the majority of the total oil discharged to the Sea originates from the rivers through discharges of domestic and industrial wastes and from natural seepages and under-sea volcanoes. Recent investigations of bed sediments in open waters by the oil industry and in the estuaries by University of Moscow have found low concentrations of oil products. Nonetheless, there are clearly areas where there is considerable local pollution close to Soviet-era oil production installations on land and in the Sea.

#### Recent news

Russia suggested during a 3 October oil conference in the Kazakh city of Almaty, that the five Caspian states - Kazakhstan, Iran, Russia, Azerbaijan and Turkmenistan - sign agreements that would allow them to take urgent measures for the protection of the Caspian environment and fish which were in critical condition. It also called for the creation of a joint Caspian centre to monitor the Sea's ecology. Slow progress in negotiations on the Caspian's legal status was cited as one of the reasons for the lack of ecological cooperation between the Caspian states. But the ecology cannot wait while we dawdle over negotiating the Sea's status, the Russian envoy for the Caspian Sea Viktor Kalyuzhny warned. The division of the Caspian Sea's resources has been a source of dispute among the five littoral states since the collapse of the ex-Soviet Union a decade ago.

Russia is opposing the laying of undersea oil and gas pipelines, arguing that before starting such projects, the littoral states need to jointly solve the issues of the ecological safety (of the projects). With strong support from the United States, Kazakhstan is planning to build an underwater link to the pipeline from Baku, in Azerbaijan, to the Turkish port of Ceyhan. Russia has expressed its opposition, fearing a loss of influence in the Central Asian region.

# The Caspian Sea at the Crossroads

David Aubry

The Caspian Sea is a crossroads of vast historical significance. Culture, peoples, flora and fauna, trade, and conquest and settlement have all paved inroads into and through this Central Asian landmark: this largest of all inland aquatic bodies in the world holds some 44% of all the non-oceanic surface waters in the world. The immense environmental resources and economic bounty of this part-marine, part-freshwater aquatic ecosystem have attracted urban centers, industry, residents, nomads, and visitors, in spite of the harsh climatic conditions that characterize all but the southern areas.

Once again, the Caspian Sea is at a crossroads, only this time the decisions taken by its neighboring governments and residents will decide its future: will the Caspian continue its present trend towards environmental degradation, or will wisdom prevail over politics and economics, leading to a continuation of a more pristine existence? The International community is poised to help with international, multi-lateral, and bilateral assistance. However, the decision is up to the bordering nations: what is their vision of the future of this global resource? Does sufficient political will exist to implement the strong medicine that is required to reverse the present downward spiral toward environmental degradation?

Though the Caspian Sea is still relatively pristine compared to its neighbors, the Black, Aral, and Mediterranean seas, it is showing clear signs of emerging problems. Most talked about, perhaps, is the loss of sturgeon resources. Once the home of up to 90% of the world's sturgeon resources, the fisheries stock for this artificially over-valued resource, though unquantified, shows a clear trend: one of rapid decline. Geographical unevenness in fisheries and law enforcement controlling this resource are contributing to its decline, as poaching has increased the illegal catch. Great concern has been expressed about the contamination of this water body, though recent measurements taken in context of the Caspian Environment Programme (CEP) indicate that the water and sediment quality are certainly not beyond recovery, and in most parts of the Caspian are relatively pristine still. However, mass mortalities of seals in the northern Caspian during 2000/2001 are believed by many to be due to a combination of general weakness induced by organochlorines and other pollutants, as well as overall environmental stress (including viruses and bacteria).

Other economic fisheries resources now may be threatened by an unwelcome invader from abroad, the faunal equivalent of the previous human invaders of

the region. A small jelly-like organism, the ctenophore *Mnemiopsis ledyi*, has invaded the Caspian Sea from the Black Sea, the latter location having experienced its devastation in the early 1990s. This jelly threatens the eggs and larvae of kilka and other fish that are critical to the food chain and ecological balance. Though a long list of foreign faunal and floral invaders have entered the Caspian Sea throughout its geological history, providing the rich diversity in its organisms and plants, this recent invader threatens to cause significant ecological imbalance.

Current socio-economic conditions in the Caspian region suggest there should be little confidence for focusing of significant attention to the environmental conditions of the Sea, contributed by the littoral countries. All five countries are in varying stages of transition: the four northern countries are in transition from the Soviet Union to independence, whereas the I.R. of Iran is in a complex transition of a different kind. The promise of exploitation of massive volumes of oil and gas in sediments underlying the Caspian has led to rapid expansion of oil and gas exploration in all five countries, with the hope for vastly expanded exploitation of these resources within the next 10 years. If the prognosis that the Caspian Sea holds more than one hundred billion barrels of oil were to come true, the socio-economic situation might ameliorate and allow broader and more effective regional government intervention into the environment. However, this gift is a two-edged sword, as rapid increase in oil and gas exploitation also brings with it increased risk of environmental damage. Because the Caspian is a closed basin, any oil spills will move throughout the region without regard to borders, creating further regional tensions and degraded environmental conditions. Weaknesses in Civil Society and Rule of Law exist in most Caspian littoral states, further weakening the socio-economic fabric needed to preserve Transboundary environmental resources.

The undetermined legal status of the Caspian Sea is another major stumbling block, affecting inter alia any regional agreement on the protection of the environment of the Caspian Sea. Lacking an agreement on the legal status of the Caspian, some governments are slow to commit towards regional environmental cooperation. Lacking a regional or international agreement on the Caspian, political and economic pressures are brought to bear on environmental issues, not only by the five littoral countries but also from external interests. Recent military tensions between I.R. Iran and Azerbaijan over ownership of sub sea oil and gas resources have highlighted the seriousness of

## The Caspian Sea at the Crossroads

sea resources have affected other countries, notably Turkmenistan and Azerbaijan, during the past pentade.

region in various aspects of its environmental awareness. The Caspian Environment Programme, a

supported by the European Union/Technical Assistance for the Commonwealth of Independent States (Takis),

Environment Programme, the World Bank, various bilateral programs, the private sector (including

and others. The CEP is attempting to define the status of the Caspian Sea, through a formalized

lead to a regional Strategic Action Programme, outlining for the next decade or so the regionally

environmental situation. The CEP, in existence now for four years, has met with varying degrees of success.

technical resources from external sources, government commitment and willingness, and other issues have all

provides a solid foundation of international cooperation, one that has led to significant progress in

Protection of the Environment of the Caspian Sea.

The condition of the Caspian Sea in 10 years depends

take. Will the littoral countries and external interests put aside political and economic concerns to focus on

global resource? Or will these political and economic interests dominate and mute the necessary response to

governments, foreign governments, private sector, international community, and other stakeholders all

preserving the environment.

The environmental resources of the Caspian are at Stake, and

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*has been a major advisor to GEF on the Caspian Environment Programme.*

## Management and Use of Caspian Sea Sturgeons by the Islamic Republic of Iran

Robert Jenkins

### Introduction

viz.

*Huso huso*, *Acipenser stellatus*, *Acipenser gueldenstadtil*, and *Acipenser persicus* suitable rivers in which to spawn. The availability of suitable spawning habitat has been systematically reduced during the

the unregulated discharge of waste material in many Caspian countries have polluted most of the major rivers that drain into

been closed off by the construction of dams and other obstacles thereby severely reducing the levels of natural

recruitment are not sufficient to sustain the catches recorded in recent years for each species. This is evidenced by the

in the Islamic Republic of Iran over the last 0 years.

- *Huso huso* beluga caviar 0%  
reduced to %
- *Acipenser stellatus* sevruga caviar %  
reduced to 0%
- *Acipenser persicus* )
- *Acipenser nudiventris* ) osetra caviar 0%  
increased to %
- *Acipenser gueldenstadtil*)

### harvesting sturgeon

In Iranian waters, sturgeons have two spawning seasons spring and autumn. Based on annual catch statistics, species exhibit the following sequence during the spring season:

*Huso huso* (February/March) *Acipenser nudiventris* - *Acipenser persicus* *Acipenser gueldenstadtil* *Acipenser stellatus* (une). The 00 sturgeon fishing seasons are 0 February to une (spring season) and 0 August to 0 September (autumn season). Greatest fishing effort coincides with the longer spring season. Fewer numbers of sturgeons are caught during the shorter autumn season. The spring season accounts for more than eighty percent of the annual Iranian sturgeon catch and caviar production. The majority of sturgeons caught in the autumn season represent a by-catch of beach seine fishing operations for white fish (*Rutilus frisii kutum*) and perch (*Stizostedion leucioyperca*).

Iran is the only Caspian country that harvests sturgeon from the open waters of the Caspian Sea. Commercial netting in rivers is prohibited. Fishing activities are restricted to relatively shallow coastal waters ranging in depth from to

<sup>1</sup> The percentage increase in production of osetra caviar, which comprises the eggs of the three species listed above, can be attributed to the significant percentage increase in catch levels of *A. persicus* in recent years (see discussion).



# Management and Use of Caspian Sea Sturgeons by the Islamic Republic of Iran

metres. Series of gill nets are permanently set perpendicular to the shoreline within this depth range.

Autumn spawning fish spend the winter months in rivers and are the first to spawn the following spring. Consequently the larval fish produced by these early spawning females have an advantage over fish that migrate to the rivers in spring spawn. Because of the clear ecological advantages of early spawning, the Iranian fisheries agency SILAT has identified these fish as important sources of brood stock and has introduced a system of paying a USD 0.00 bonus to beach-seine fishermen when mature females of *A. nudiventris* and *H. huso* are surrendered for use in the restocking program. In an effort to reduce the numbers of immature sturgeons caught as a by-catch of other fisheries, in recent years the Iranian Fisheries has implemented a license buy-back program to reduce the number of participants in these fisheries. Since its inception, the program has expended USD million to purchase more than ,000 fishing permits.

## Restocking Program

The Government of Iran has been operating a restocking program since 9 . hatcheries are strategically located in the three provinces that form the Caspian coastline. These hatcheries produce large numbers fingerlings of all five species of sturgeon that are subsequently released into rivers that are known to have formerly provided important spawning habitat for sturgeons.

When the fish arrive at the hatchery, male and female brood stock are placed into holding pens where the male and female gametes are removed in preparation for artificial fertilization. Females are stimulated by an intramuscular injection of pituitary gland hormone to release their eggs. A second injection is delivered to synchronize the release of eggs into the abdominal cavity. Following the second injection the female is slaughtered and the eggs evacuated into a large flask containing water. Fertilization occurs when the male gametes are added and mixed by hand with the eggs. Hatching occurs in approximately six days.

The 000 restocking program entailed the release of approximately 0 million fingerlings, each weighing approximately gm, into suitable rivers around the southern Caspian Sea. SILAT is planning to increase production of artificially propagated fingerlings to 0 million within the next five years.

## Extraction and Processing of Caviar

Female sturgeons received by caviar processing plants are killed and bled by severing major blood vessels to the gills. The

membranous wall of each ovary is ruptured and the eggs (caviar) contained therein scooped out by hand into a stainless steel fine mesh sieve. The eggs are weighed and a quantity of sterilized salt crystals, proportionate to the weight of caviar, is added and manually mixed with the eggs. Excess water is drained from the eggs, which are then packed into . g and g containers for export. Smaller 00gm containers (for domestic use) are used to package caviar that exceeds multiples of . g or g.

Processed, packaged caviar is retained under cold storage at each processing plant for one to two days before being transported by road to the appropriate regional office. Each processing plant employs a resident veterinary inspector who is responsible for sampling each sturgeon for any bacterial infection, as well as ensuring that the processing facilities are maintained in a clean, sterile condition. Each regional office also employs a veterinary inspector who certifies compliance of the caviar received with quarantine and public health standards. Certified packaged caviar is kept under secured cold storage facilities at the regional offices until it is exported. This period does not exceed - months. Regional offices are required to submit summaries of caviar stocks every 0- days to the SILAT head office in Tehran.

## Research

Management of the sturgeon fishery in Iran is based on a comprehensive scientific program. The International Institute for Sturgeon Research was established in Rasht to serve as the principal entity in Iran to conduct applied research and management related investigations on sturgeons. Research departments include Stock Assessment, Food Technology and Processing, Fish Nutrition and Production, Water Quality, Biochemistry and Physiology, Genetics and Biology.

A long-term management objective is to achieve (and maintain) twenty-five percent natural recruitment in all five species in order to maintain the genetic variability of sturgeon in the Caspian Sea. The development of a genetically based restocking program will contribute to achieving this management goal by ensuring the genetic integrity of sturgeon populations of the Southern Caspian Sea is conserved. In this respect, the Institute is presently designing several major research programs, the results of which will contribute to improving management and sustainable use of sturgeons in the Southern Caspian Sea. Projects being developed include a study to identify geographic

differences in the genetic characteristics of each species of sturgeon in order to define more precisely the relationships between different stocks.

### Regulation and Enforcement

Commercial sturgeon fishing and processing of caviar is a government-based industry. The capture and possession of sturgeon and caviar is prohibited and the Iranian Government expends considerable resources to enforce this prohibition. Each of the government fishing stations situated along the Caspian Sea is associated with a S ILAT enforcement office. Enforcement personnel are equipped with firearms and have access to modern boats with high-powered outboards as well as having ship-to-shore transceivers. Regular patrols are conducted within allocated zones along the Caspian coast. Poaching for sturgeon occurs occasionally but does not appear to be a major problem in Iran.

The use of set gill nets in Iranian waters of the Caspian Sea is prohibited. Most of the activities of enforcement officers are associated with detecting and confiscating illegal gill nets that have been set for other species. Although sturgeons are not a targeted species, monofilament gill nets set illegally for these species, have a 1 cm mesh and catch immature sturgeon.

S ILAT employs a system of alphanumeric codes that enables each container of caviar to be linked to the individual fish from which the caviar was obtained. Each container displays an engraved number on its base that corresponds to the processing plant responsible for processing and packaging the caviar. The species and type of caviar (except osetra, which comprises caviar derived from three species (*A. persicus*, *A. nudiiventris* and *A. gueldenstadtii*) are identifiable by a colour coded rubber band that is used to seal the container. Each container is coded to enable the caviar to be linked to the individual fish. It is not clear how this system operates for osetra caviar, which represents a composite product derived from three species.

Caviar exports from Iran can only be authorized and undertaken by the S ILAT Trading Company in Tehran. The S ILAT Trading Company receives export orders and requisitions the necessary quantities from stocks held at the regional offices. On its arrival in Tehran, the caviar is checked once again and re-certified acceptable prior to export.

### Evaluation

Management and use of all species of sturgeons occurring in the Caspian Sea and its associated rivers can be described as a compensatory wild harvest. The Caspian Sea, its watersheds and associated aquatic resources represent integral components of a closed system. All countries that border the Caspian Sea presently administer a commercial sturgeon fishery based on national annual catch quotas. With the possible exception of *A. persicus*, it is apparent that stocks of sturgeons, because of the migratory behaviour, represent a shared resource. As a consequence, there is a

compelling need for cooperative management, based on collaborative research involving all participating Caspian countries.

It is immediately apparent that natural recruitment of present stocks of all five species of sturgeon in the Caspian Sea is substantially below that required to sustain the levels of commercial off-takes that have been recorded in the 1990s. Consequently, the establishment of fish hatcheries and implementation of a compensatory restocking program have become essential elements for managing the sturgeon fishery in the Caspian Sea.

Iran is presently the only Caspian country that harvests sturgeon from open coastal waters of the Caspian Sea. Commercial netting of rivers in Iran is prohibited. This policy appears to have considerable merit in that it provides protection against important spawning sites being saturated with gill nets and the possibility of nets being set across a river. This would have the disastrous affect of reducing even further already depleted natural recruitment.

It is clear that, by analyzing the parameters that are recorded and comparing the results with those of previous years, S ILAT is able to monitor trends in the populations and evaluate the impact of harvest annual levels. However, it is not clear, under the present system of stock assessment, precisely by what means S ILAT determines in what quantities fingerlings of each species will be produced for the restocking program each year. Although greater attention is presently being focused on artificial production of some of the more threatened species (*viz. H. huso*, *A. stellatus* and *A. nudiiventris*), the approach to fingerling production should be approached more strategically.

### Recommendations regarding international co-management

A Trans-Caspian Commission on Sustainable Management of Sturgeons, comprising representatives of the five Caspian countries, with a Secretariat, should be established to provide an independent forum for inter alia:

- Establishing a collaborative approach to determining and allocating national catch quotas
- Overseeing the development and implementation of a fully coordinated restocking strategy for each of the species of sturgeon occurring in the Caspian Sea
- Designing cooperative research programs and protocols for sharing research results
- Facilitating cooperative enforcement activities and exchange of intelligence, particularly with neighbouring States.

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# How is the private sector coping?

Interview with Thierry Uldry, Caviar House

## How has the current sturgeon situation in the Caspian affected the Caviar Business?

In order to better situate the impacts on business, I would like to go back ten years. Ninety five per cent of world caviar production comes from the Caspian Sea. Until 1991, the caviar market had only two suppliers: Russia and Iran, each a governmental body, each responsible for the production, processing, sale and export of the national caviar. The caviar market was quite stable, both in terms of price and quality. After the collapse of the USSR in 1991, the historic Russian governmental company was bereft of power, and the international market was flooded with poor quality caviar at reduced prices. Today, I believe that the five countries around the Caspian have realised the strategic importance of maintaining the sturgeon and its trade alive. We now have to work more closely than ever, among authorities, concerned organisations and the industry, to assure the serenity of the sturgeon population and to invest more time and money on this subject. This situation destabilised the whole market and huge quantities of illegal caviar were exported, without any controls whatsoever. Prices fell from US\$300 to US\$25 per kilogram for ex-USSR caviar, paving the way for thousands of new caviar producers/traders/importers. The large buyers (airlines, supermarkets, cruise ships) not only became confused, but also took advantage of the situation. Of course the Iranian governmental body, the SHILAT Trading Corporation, had to react in order to sell their production. At that time, Iranian caviar was not reputed as being of the best quality, but cleverly, SHILAT decided, based on Caviar House's advice, to focus and invest on quality rather than to compete on prices. This situation had penalised historic caviar traders, and even eliminated some from competition.

## Had you been aware of the situation for a long time?

Historically and since 1950, our company purchased and distributed Russian caviar almost exclusively. To give you an idea of what we represent, Caviar House operates about 50 shops and restaurants under the name Caviar House and supplies several thousands of distributors, hotels, restaurants, retailers, airlines and cruise ships all over the world, positioning our company as not only the leader in the caviar market, but also the most recognised brand as regards to quality caviar. While the USSR's fate worsened in 1991, we decided to withdraw Russian caviar from our shops and from our sales programme. We joined forces with the Iranian producer. Together with the SHILAT, we promoted Iranian caviar and developed a strategic marketing plan, based on quality and traceability. We carefully examined the evolution of the investment environment in the former USSR countries, and did not purchase caviar directly from Russia until late in the 90s. We recognised that events did not favour the sturgeon, since every single fish, mature or not mature, male or female, with or without caviar was being caught, and immediate profit alone

was taken into consideration by the concerned parties. Stock control management programmes were no longer in place, as none of the illegal caviar suppliers wanted to invest any part of their huge profits, and the government had no income to finance the restocking program in the Caspian Sea. Caviar House had no choice but to invest in public relations to inform the media about the situation.

## What is the role of the private sector in helping or hindering the situation ?

To be honest, we did not know how we could improve our contribution in this difficult situation until the first contact with TRAFFIC and then CITES took place in 1996. At that time, and at Germany's request, a report was being prepared by TRAFFIC on the alarming sturgeon situation. Caviar House immediately confirmed to both CITES and TRAFFIC that we would provide them all the trade information they might possibly need, and rapidly, we saw the possibility of stopping this situation through supporting the CITES program to introduce the 27 species of sturgeon in Appendix II of the Washington Convention. To improve our understanding, I chose to participate in the CITES 10<sup>th</sup> Conference of Parties in Harare, Zimbabwe, to support the proposal and to help finalise the draft proposal, by giving input from the industry. I was surprised to be the only industry representative from among more than 1400 delegates. I realised that our caviar industry had to join forces to help scientific bodies. In Europe, I contacted caviar importers and explained the situation to them. For the first time in the history of caviar sales, the 8 most important caviar distributors representing no less than 80 percent of the legal caviar market met and decided to establish an association with the goal of contributing to the protection of the sturgeon. The ICIA (International Caviar Importers Association) was born.

Ever since, we have participated in every single official and non-official convention where the sturgeon issue is discussed; as well as in subject-specific workshops such as those on labelling, and export quotas. Caviar House has also played the role of mediator, bringing to the table authorities from exporting countries in order to explain the long-term advantages of adhering to the ICIA programme. The ICIA financially supports several projects and research programmes on sturgeon issues. It also contributes to restocking plans by adding a certain amount of money to the price for each kilogram of caviar purchased.

Finally, we published and distributed printed materials to our customers, including but not limited to end consumers, informing them of the situation. More than ever, the industry must be seen as a partner in this venture and not as an enemy.

## What action do you propose?

I remember the positive vote given to sturgeon in Harare. In discussions with various delegations, I gathered that

*We recognised that events did not favour the sturgeon, since every single fish, mature or not mature, male or female, with or without caviar was being caught, and immediate profit alone was taken into consideration by the concerned parties.*

## How is the private sector coping?

implementation of the decision would not be an easy thing, and the success of such a listing would depend on two steps.

The first step and certainly the easiest one was to stop export of illegal caviar, by awarding every single export and import a CITES certificate. Two years later, in 2000, more than 80 percent of the illegal caviar had disappeared from consumer markets. However, two platforms known for their function as transit suppliers of illegal caviar were still in active: Dubai and Istanbul. Fortunately, a decision has since been made for Turkey and, hopefully, action will also be taken soon with regards to the UAE.

Once this is done, we can say that the illegal international trade of caviar will be under full control, and additional tools to control and monitor exports and commercialisation of caviar would need to be implemented such as:

- Implementing a strict labelling system for caviar bulk exports with all necessary information and one use labels; and a requirement to label every single repacked packaging with information pertaining the traceability of the caviar.
- A mandatory list from concerned governments of the producing countries of agreed exporters of caviar.
- Rather than limit controls at the border during import of the caviar, a requirement to intensify controls in the consumer countries (Europe, USA, Asia) at warehouses, points of sale, restaurants.

The second step is more difficult. It consists in reorganising the domestic caviar catch and markets in the former USSR countries (e.g. Azerbaijan or Kazakhstan) where it is known that the illegal catch and consumption of caviar is 10 times in excess of legal exports. This step is certainly not easy, as one faces cultural and social issues, but this is a key element for the preservation of the sturgeons. It is the immediate challenge of the respective governments henceforth to:

Implement strict controls on production and exports of caviar.

Decrease consumption in their respective countries to an acceptable level, by providing official legal licenses to retailers and increasing the retail prices.

Generate enough income through exports to finance and make investments in hatcheries and research programmes in the Caspian Sea.

It is important to note that during the CITES Standing Committee in June 2001 the concerned countries signed a document where they committed themselves to an action list with regards to the above mentioned points, for a limited period of time, to ensure the export of caviar. For the first time, CITES is facing a situation where the domestic market consumes as much as they can and where a ban on caviar exports would certainly not save the sturgeons, because every single kilogram of caviar not exported would then be consumed locally. Furthermore, a ban would generate a decrease of caviar prices in the domestic market, as no demand for export would exist. Therefore, to generate the same amount of profit, smugglers

would have to increase the volume of caviar. I understand that since the signature of this document, there have been signs of improvement, which is a real positive development.

### What is your own strategy to cope with the situation ?

In the late 90s, our first action plan with regards to the strategy of operating the company was to decrease the important dependence of caviar within our group. To illustrate, the proportion of our sales realised with caviar has been diluted from 80 percent in 1994 down to 28 percent in 2001, while our global turnover is expanding.

The second action has been to redevelop contacts with the governments of Russia and Azerbaijan which were lost in 1991 and work with them on a constructive development, based on a win (exporter), win (importer) & win (sturgeon) situation.

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We do not exclude investments in sturgeon farms located in one or more of the Caspian Sea countries, but this programme must be developed together with the wild sturgeon preservation programme.

### How do you compare the situation and policies/ programmes of each Caspian country ?

One cannot really make the comparison. In the northern part of the Caspian Sea, sturgeon and caviar is fully part of the culture, as this sea product has been consumed for centuries. In Iran, sturgeon has only quite recently been fished, about fifty years ago, and the local demand for caviar is almost zero. Furthermore, the collapse of the USSR has created new countries, which are missing institutions and the experience in such fields as well as having social and economical problems to solve. Our role is to support, inform and train them and to provide them with the necessary tools to implement institutions. Of course, their collaboration is crucial for the success of such action plan.

However, I invite these countries to learn from what the Iranian government has implemented, and in any case to meet all of them on a regular basis to exchange ideas, experiences and results. We all share a common problem and challenge before us: conservation of sturgeons.

*Thierry Uldry is Group Chief Executive Officer at Caviar House in Geneva, Switzerland, and a supporter of efforts to rehabilitate the Caspian and its sturgeon populations.*

# Of All the Means, Would Trade Save the Sturgeon?

Alex Werth

In following the case of the sturgeon, one might wonder how it is possible in today's well-informed and watchful world that the majority of fish stocks behind the famous and prestigious sturgeon roe caviar are now on the verge of extinction. The Caspian Sea, surrounded by the five littoral states of Azerbaijan, Kazakhstan, Iran, Russia and Turkmenistan, used to supply more than 80 percent of the world's sturgeon stock. However, Caspian sturgeon species are now heavily depleted by virtue of *inter alia* reduction of reproduction grounds, over fishing (especially poaching), and pollution of the Caspian and its surrounding 50,000 square kilometres of wetlands, mainly caused by increased oil drilling and processing activities in the Caspian region<sup>1</sup>.

The principal reasons for such developments are thought to be the collapse of the former Soviet Union which gave rise to three new independent states that are now in transition from socialist to capitalist market systems; the as yet unclear status of the Caspian sea (maritime sea or big lake?); the immense reserves of undeveloped oil and natural gas; the preclusion of unilateral action due to the fact that sturgeon straddles the entire Caspian region; and the poverty of local communities of the Caspian region.

However, these factors do not entirely justify the situation since caviar is a significantly traded renewable resource<sup>2</sup> on which most of the Caspian coastal communities depend. The answer lies in the fact that most littoral states have concentrated on the resource best able to provide urgently needed monetary resources, i.e. oil, and have therefore placed sustainable sturgeon co-management at the bottom of their agendas. In addition, most of the coastal fishing communities, which were formerly subject to strict Russian sturgeon management rules, misuse their new freedom and badly exploit the sturgeon fisheries thereby destroying the fish population and the industry on which they depend by poaching, over-fishing and selling the caviar on the black market. The case is somehow reminiscent of old stereotypes of mismanagement of natural resources, such as the killing of the African Elephant for its ivory, or unnecessary whale hunting, for example.

## Has nothing been done to stop it?

Attempts have been made in 1998 within the CITES<sup>3</sup> framework to list all sturgeons and sturgeon products in

*Most littoral states have concentrated on the resource best able to provide urgently needed monetary resources, i.e. oil, and have therefore placed sustainable sturgeon co-management at the bottom of their agendas.*

Appendix II. In June 2001, Caspian littoral states were required to refrain from further harvesting that year and were threatened with the freezing of the caviar trade in 2002 unless they complied with an action plan to combat over-fishing and illegal trade in sturgeon and sturgeon products<sup>4</sup>.

Unfortunately, unlike the ivory trade, export quotas and a trade suspension (which is CITES most drastic remedial action) alone cannot tackle the problem since caviar, which cannot be officially exported, is being consumed domestically or sold on the black market.

## Are no further legal frameworks applicable?

Despite the fact that Caspian littoral states signed various multilateral environmental agreements (MEAs) on (sturgeon) fisheries<sup>5</sup>, sturgeon stocks continued to shrink more or less unchecked to current levels. This was due in part to the fact that though sturgeon is a shared bio-resource, not all five littoral states ratified the agreements. Regarding the member states, unchecked in compliance and/or non-enforceability of their obligations has been witnessed.

The Caspian Environment Programme was set up in 1998 in response to the lack of a uniform legal regime applying to all littoral states. It was mandated to follow up cooperative action already undertaken by littoral states<sup>6</sup>, and to draft regional agreements such as the Framework Convention on the Caspian Sea and an agreement establishing a regional fisheries body.

Various efforts involving cooperation between the Global Environment Facility (GEF), UNDP, EU/TACIS<sup>7</sup>, UNEP and the World Bank, are underway in order to improve the situation in the Caspian including its resources and its coastal communities. Recently, under the auspices of the UNEP Regional Office for Europe, an attempt was made to coordinate the actions taken under CITES and the Caspian Environment Programme (CEP) to prevent an anticipated caviar import ban by CITES members. However, due to discrepancies among Caspian littoral states, no real improvement was achieved and CITES finally compromised by requiring the littoral states to stop harvesting sturgeon only for the rest of 2001, although most of the harvest had already been completed.

All attempts to bring the littoral states to the negotiation table are now at risk as Azerbaijan and Iran face serious conflict

<sup>1</sup> Caspian Environment Programme (CEP), 2001.

<sup>2</sup> The current harvest entering the legal international trade in caviar is valued at about USD 100 million, whereas the illegal harvest together with domestic consumption is around ten times higher; UNEP, June 2001.

<sup>3</sup> Convention on the International Trade in Endangered Species of Wild Fauna and Flora.

<sup>4</sup> See Recommendation 12.2 of the CITES Standing Committee in its 45<sup>th</sup> meeting; Turkmenistan is subject to it only where appropriate, whereas Iran is excluded.

<sup>5</sup> See table below.

<sup>6</sup> There exists, e.g., a draft Convention on the Conservation and Utilisation of Bioresources of the Caspian, and several Declarations and Reports addressing the Caspian Sea.

<sup>7</sup> Technical Assistance for Commonwealth of Independent States

## Of All the Means, Would Trade Save the Sturgeon?

concerning oil reserves in the Caspian in particular in the disputed Araz-Alov-Sarq block. Azerbaijan claims this region as part of its Exclusive Economic Zone (EEZ) granted by international maritime law, whereas Iran wants the 150,000 sq mile Caspian Sea to be regarded as a lake, requiring that its resources be cooperatively developed by the states surrounding it.

*All attempts to bring the littoral states to the negotiation table are now at risk as Azerbaijan and Iran face serious conflict concerning oil reserves in the Caspian*

### So that's it?

It is worth noting that three of the littoral states - Azerbaijan, Kazakhstan and Russia - are observers of the WTO and are negotiating accession with other WTO members. Clearly the region wants to join the club of 142 (soon 144 with China and Chinese Taipei) to play an active role in globalisation, international trade liberalisation and rule-based systems. Such an intention is to be anticipated with respect to Iran and Turkmenistan, though the doors at the WTO remain closed for Iran and Turkmenistan is still paralysed by a combination of economic, political, cultural, and historical factors (such as its status under international law), hindering its manoeuvrability on the international platform. For their part, the littoral states (especially the three former Soviet states) are intensively wooing big investors for resources to develop the infrastructure that is necessary to exploit the promising oil and gas resources in the Caspian region. All littoral states are members of the World Bank, and several of them are also members of the Asian Development Bank (ADB).

In order to join the global trade community, many changes have to be made for the littoral states. The relevance that this movement has for the international community may be understood from the fact that the WTO Accession Committees for Russia, Kazakhstan and Azerbaijan are chaired by three well-established Northern countries: Norway, Finland and Germany.

### Will new rules apply to sturgeon and caviar?

There is a possibility that WTO rules on geographical indications (currently limited to spirits and wines, e.g. Champagne), appellation d'origine and rules of origin might be extended to caviar. This would provide the littoral states with intellectual property rights (IPRs) which would enable them to take legal action against producers selling, for example, non-sturgeon roe as Beluga caviar or non-Caspian sturgeon as fish caught in that region.

When it comes to market access, other WTO members would be prevented from taking unilateral action against the littoral states, for example by imposing an import ban on sturgeon and sturgeon products. However, this does not affect the measures taken under CITES as long as the new WTO members are also members of CITES (as in the case of Azerbaijan, Kazakhstan and Russia). One need only think of the case whereby Turkmenistan (not a member of CITES) after approval

of its (theoretical) WTO accession bid challenges the ban on caviar imposed by another WTO member following a respective CITES recommendation, under the WTO dispute settlement mechanisms. This scenario would then be another chance to test the unprecedented relationship of WTO and MEA rules, especially under GATT 1994 XX (b) and (g).

According to other WTO agreements, the littoral states will receive protection against discriminatory use of sanitary standards applied to caviar, and against labelling schemes introduced by other WTO members constituting a technical barrier to trade in sturgeon products for the littoral states.

WTO rules would also apply to economic instruments as they are used alongside new sustainable management tools for sturgeon. For example, the littoral states might consider establishing a system of tradable catch quotas in order to create a market for sturgeon stocks. As certain assessments of the relationship of tradable emission quotas under the Kyoto Protocol and WTO rules revealed<sup>8</sup>, such instruments can have implications for international trade rules. However,

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it should be noted that WTO members such as Iceland and New Zealand have successfully implemented tradable catch quota regimes for their fisheries, which have not been challenged by other members. In case the littoral states were subsidising their local coastal fishermen to, for example, create incentives to engage in sturgeon farming or sturgeon recovery programs, it would have to be assessed whether the WTO rules on subsidies and

countervailing measures would apply. However, it must be seen that there are hardly any WTO members other than the littoral states that produce caviar, so that infringement of other members' interests need not be expected. With a view to the littoral states themselves, one should also consider that subsidies promoting sustainable fisheries management will - at least for the next decade - lead to a decrease in caviar production as all efforts must be directed at sturgeon stock recovery activities.

### Is that an improvement for the sturgeon?

The regulatory changes faced by the littoral states as they enter world trade do not look like a potential remedy for the

<sup>8</sup> See e.g. Kim J A, Potential Limits Imposed By The Multilateral Trading System In Implementing Flexibility Mechanisms, University of East Anglia, Norwich, 2000.

## Of All the Means, Would Trade Save the Sturgeon?

Caspian sturgeon at least at first sight. Nevertheless, the WTO has proven that it allows for a wide range of environmental measures provided that they are least trade distortive (i.e. while maintaining environmental standards, the least distortions are imposed on trade). Furthermore, it is clear that there will be a lot of trade-offs within the accession negotiations. For example, for the WTO members to grant IPR protection to Caspian caviar products through extended geographical indications, the littoral states will have to offer something in return. For those WTO members

*Investing in the Conservation of the Caspian Sea and its sturgeon populations is a precondition for the successful participation of littoral states in international world trade.*

promoting sustainable development within the WTO as proclaimed by the Marrakech Agreement, it should be self-evident that binding commitments by the littoral states on the conservation of the Caspian and its bio-resources must be a prerequisite for accepting the littoral states accession bids and, particularly, for any special trade rules on caviar. The importance of the new accession bids for the trade community will be a chance to address all the issues raised in a surrounding where money is the

main issue and as such an environment would generally tend to result in quick and easy solutions, the negotiators should not miss the opportunity.

Finally, one (much more general) fact should not be underestimated: the littoral states are set to join the international trade community, exposing them to heavy competition from most of the countries of the world. In such a multifaceted trading environment it is crucial for a country to sell itself just as companies do using marketing strategies, as well as building customer and brand loyalty. A positive image is crucial to survive in this competitive environment. The Caspian sturgeon, as a symbol of the careless handling of natural resources, the decay of the unique Caspian Sea ecosystem, a ruthless oil industry and poaching fishing communities, is not the optimal image to attract trading partners. Some might counter that the littoral states just want to attract the oil companies and that they will come no matter what. However, oil companies have to care about their image and would not be willing to play the role of the accomplice sturgeon killers. In addition, the littoral states will not

envisage a dependency on only one export resource, while neglecting the poor rural and coastal communities. This population depends on agriculture and fisheries, and thus on a sound environment. Not sharing the cake with them, but even putting the bio-resources they depend on at risk, could lead to political instability, discouraging potential investors. Therefore, the littoral states could maintain the livelihoods of their coastal communities by investing in the sturgeon fisheries they depend on. In addition, tourism the world's biggest single employer would be a chance for the littoral states to maintain rural employment as well as to earn foreign exchange. Tourists in particular tend to choose their destination according to the image of the host country and like to go where the environment is sound and attractive.

In conclusion, it should be clear that in the long run - investing in the Conservation of the Caspian Sea and its sturgeon populations is a precondition for the successful participation of littoral states in international world trade and for forming closer ties with regional markets such as the EU. By doing so, the littoral states will achieve a threefold goal: (1) saving the environment; (2) promoting the livelihoods of the coastal communities; and (3) encouraging trading partners to trade with, and invest in, the world trade newcomers. So the Caspian sturgeon could potentially stand for something completely different: the proof that trade and sustainable development are for the most part mutually supportive if used in a wise and far-sighted way.

|              | WTO        | CITES | CBD <sup>9</sup> | CMS <sup>10</sup> | FAO | RAM SAR<br>11 | UN CL<br>12 | SHM<br>FSA<br>13 | WB <sup>14</sup> | AIB <sup>15</sup> |
|--------------|------------|-------|------------------|-------------------|-----|---------------|-------------|------------------|------------------|-------------------|
| Azerbaijan   | (Observer) | X     | X                |                   | X   | X             |             |                  | X                | X                 |
| Iran         |            | X     | X                |                   | X   | X             |             |                  | X                |                   |
| Kazakhstan   | (Observer) | X     | X                |                   | X   |               |             |                  | X                | X                 |
| Russia       | (Observer) | X     | X                |                   |     | X             | X           | X                | X                |                   |
| Turkmenistan |            |       | X                |                   | X   |               |             |                  | X                | X                 |

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<sup>9</sup> Convention on Biological Diversity.

<sup>10</sup> Convention on the Conservation of Migratory Species of Wild Animals.

<sup>11</sup> Convention on Wetlands of International Importance Especially as Waterfowl Habitat.

<sup>12</sup> UN Convention on the Law of the Sea.

<sup>13</sup> 1995 Straddling and Highly Migratory Fish Stocks Agreement.

<sup>14</sup> World Bank Group.

# Oiling the Conflict: Petrodollars and Caviar in the Caspian

Jason Switzer

No one can easily forget the images of the dead zone that is the Aral Sea region. Once the world's fourth largest inland sea, large-scale diversion of the rivers feeding it has polluted and shrunk it by two-thirds, exposing dangerous heavy metals in the lake bed, devastating fish stocks and wildlife, and creating disease and malnutrition in the region<sup>1</sup>. The same forces - economic and political - that devastated the Aral Sea may be at work in the Caspian Sea as well, with serious implications for stability in the region.

This article will briefly describe some of the interlinked commercial and political forces that are undermining environmental security in the Caspian region, and illustrate both the international conflicts, and the potential for collaboration around common environmental interests to create a foundation for collective peace and prosperity. Ensuring the long-term viability of the sturgeon fishery is in the interest of the oil companies because failing to do so will increase social tension. Furthermore, international cooperation over conservation of the fisheries can be the basis for resolution of broader conflicts between the littoral states.

## Rivalry over natural resource exploitation can cause conflict

International attention has recently turned towards the Caspian Sea, the world's largest inland sea. Under Soviet domination following the Second World War, borders were drawn up without regard to ethnic ties in the region, and management of the Sea was jointly shared between the USSR and Iran. Today, the delineation of control of the Caspian is hotly contested by 5 states: the transition states of Azerbaijan, Kazakhstan, Turkmenistan and the Russian Federation, and Iran. Complicating the jostling between these

states is US foreign policy aimed at the contradictory ends of facilitating its oil companies' commercial aims, diversifying its own foreign energy dependence, blockading Iran and competing with Russia for influence in the region.

Several proposals have been mooted for addressing the contested status of the Caspian, ranging from dividing the Sea in five equal chunks, to allocating different-sized pieces based on each country's share of the coastline. The Caspian states are scheduled to meet in Turkmenistan this October to work out a legal regime for the waters.

While negotiations proceed, ongoing disputes undermine their progress. These include a longstanding feud between Azerbaijan and Armenia over borderlands; and between the various states over control of the waters<sup>2, 3</sup>:

- In July an Iranian warship trained its guns on an Azerbaijani-flagged survey vessel belonging to British Petroleum, forcing it out of waters claimed by Iran.
- A BP-led consortium reached an \$8.9 billion contract with the Azeri government to develop the Azeri-Chirag-Guneshli complex, despite Turkmenistan's claim to the same area.

As a result of both the economic contraction in the region and the uncertain state of governance of the Caspian, the capacity both to monitor and to enforce protection of the fish stocks has declined, resulting in significant levels of poaching and of illegal trade, as well as petroleum-based pollution.

## The inflated economics of oil and the undervalued sturgeon

The Caspian Sea possesses 85% of the world's stock of sturgeon and is the source of 90% of all black caviar<sup>4</sup>. Caviar retails in the OECD for about US\$2,000

<sup>1</sup> See for example Postel, S. Dividing the Waters: Worldwatch Paper no 132. Worldwatch Institute, 1996.

<sup>2</sup> See for example, [http://www.economist.com/world/africa/displayStory.cfm?Story\\_ID=719184](http://www.economist.com/world/africa/displayStory.cfm?Story_ID=719184)

<sup>3</sup> See for example, [http://english.peopledaily.com.cn/200107/26/eng20010726\\_75815.html](http://english.peopledaily.com.cn/200107/26/eng20010726_75815.html) and

<sup>4</sup> UNEP. Global Environmental Outlook, 2000: 112-113.

<sup>5</sup> Kurata, P. Caspian ecosystem Menaced by Pollution. Environmental News Service. April 14, 1999. <http://ens.lycos.com/ens/apr99/1999L-04-14-01.html>

<sup>6</sup> Motavelli, J. Black Gold. E Magazine, November-December 1999. [http://www.emagazine.com/november-december\\_1999/1199curr\\_caspain.html](http://www.emagazine.com/november-december_1999/1199curr_caspain.html)

<sup>7</sup> Only a fraction of technically recoverable reserves of crude oil the amount of oil that experts are certain of being able to extract without regard to cost - can be viably extracted at current market prices using existing technology. Source: Petroleum, Encarta Online Encyclopedia. Microsoft Corporation, 2001. <http://encarta.msn.com>



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a kilogram. At its peak in the mid-1980s, more than 30,000 tons of sturgeon were landed by Soviet and Iranian fishermen. By 1995, the official catch was down to 3,100 tons<sup>5</sup>, but estimates of the illegal catch are between twice and ten times that amount. The illegal trade in caviar is estimated to be worth \$125 million each year. The legal caviar exported by Iran alone netted \$40 million in 1997<sup>6</sup>.

Dwarfing the economic value of caviar in the Caspian is the immense stock of fossil fuels beneath the sea. The Caspian is home to proven oil reserves of 18 - 35 billion barrels (equivalent to the North Sea reserves) with a potential as high as 200 billion barrels (double the remaining reserves in Saudi Arabia)<sup>7</sup>. Natural gas reserves are believed to be on the order of 8-10 trillion cubic metres, placing it (a distant) second to the vast gas reserves believed to reside in the Persian Gulf region<sup>8</sup>. That said, estimates of stocks are likely overoptimistic<sup>9</sup>: Soviet estimates were oriented at technical feasibility, not economic viability; and the countries in the region have an incentive to use inflated numbers to attract external investment. Moreover, because of the costly problem of transporting the oil and gas from the Caspian for export, complicated by the political risk in the region - instability, crime and corruption - and the variability in the price of oil, experts predict it unlikely that oil and gas from the region will exceed about 2-3% of world production.

Regardless of the investment potential from fossil fuel production, it is arguable that more people directly depend on and benefit from the fisheries than would be directly supported by the oil industry.

## Incompatible uses

Oil production can be a boon to the economy and a source of government revenues for social expenditure.

*The environmental impacts of oil exploration may be the final nail in the coffin of the sturgeon fishery*

Conversely, the benefits of large-scale development projects are often appropriated by elites, while the negative impacts are borne by politically marginalised groups, socialised across society or passed on to future generations<sup>10</sup>.

The environmental impacts of oil exploration may be the final nail in the coffin of the sturgeon fishery, a possibility acknowledged by Kazakhstan's fishery officials<sup>11</sup>. Unless mechanisms are in place to channel the royalties from resource extraction to their citizens, and ensure the protection of the environment, it is unlikely that the rising tide of petrodollars will raise all boats, and more likely that the fishing fleet will run aground.

## A shared interest in peace

Governments must often balance the common good against the good of particular groups, and seek to maximize development for the good of the national economy. Those who see sturgeon and oil as competing development modes, however, miss the vital linkage between the two.

Petrodollars may be the key to saving the sturgeon in the Caspian. Each country - and oil company - in the region has an interest in resolving ownership status in the Sea, as the continued uncertainty discourages vital foreign investment, and further delays the start of the petrodollar revenue stream. Moreover, until the boundaries are settled and funds directed towards monitoring and enforcement, environmental management will remain ineffectual.

This space and my own knowledge of activities in the region are insufficient to delve deeply into the lessons of the environmental security framework for resolving this problem. I offer **three propositions for debate** by the IUCN community.

Based on its research, the CEESP/IISD Task Force on Environment and Security has concluded that common environmental interests can bring otherwise disputing

<sup>8</sup> Zeus Development Corporation. World Liquid Natural Gas Review, 2001. [http://www.lngexpress.com/Ingrev/intro\\_sglocs.asp](http://www.lngexpress.com/Ingrev/intro_sglocs.asp)

<sup>9</sup> Waelde, T. International Good Governance and Civilized Conduct among the States of the Caspian Region. Centre for Energy, Petroleum, and Mineral Law and Policy Journal, 2000. <http://www.dundee.ac.uk/cepmlp/journal/html/article4-16.html>

<sup>10</sup> World Commission on Dams. Dams, People, and Development, Earthscan, 2000; McPhail, K. and Davy, A.

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<sup>11</sup> Badkhen, A. Oil Rush May Kill Caspian Sea Ecosystem. St Petersburg Times, July 25, 2000. [http://www.sptimesrussia.com/secur/588/news/n\\_oil.htm](http://www.sptimesrussia.com/secur/588/news/n_oil.htm).

<sup>12</sup> Wolf, A.T. Conflict and Cooperation along International Waterways. Water Policy. Vol. 1 No. 2, 1998:251-265.

<sup>13</sup> This hypothesis is advanced by task force member Leif Ohlsson in his paper Ohlsson, L. Livelihood conflicts: linking poverty and environment as causes of conflict. Sida, November 2000.

## Oiling the Conflict: Petrodollars and Caviar in the Caspian

parties together in mutual-gains problem solving, as a basis for broader negotiations. Examples range from agreements over international waterways a 1960 agreement between Pakistan and India has endured through two wars between the countries<sup>12</sup> to international Peace Parks spanning contested international boundaries, such as the La Amistad reserve between Costa Rica and Panama. **Efforts to conserve the Caspian sturgeon should be designed to contribute to resolution of the broader conflict**, acting as a testing ground for cooperative mechanisms and as a confidence building measure between parties.

Preventing the collapse of the sturgeon fishery and the loss of the thousands of livelihoods dependent on those fisheries in the Caspian is in everyone's interest. Mass unemployment can create a seedbed for revolution and terrorism<sup>13</sup>, as evidenced by the mobilisation of the rural poor for violence on the one hand in Rwanda, and on the other by continued sabotage and kidnapping of oil workers in Nigeria. Even without strong governmental efforts to enhance environmental management in the Caspian, **proactive engagement by the oil companies in the region in securing and enhancing the fishery-based livelihoods in the region would be prudent and cheap - political risk management**. Attempts to externalise the costs of environmental management to conserve the sturgeon will come back to bite companies on the tail. To that end, CEESP is actively engaged in developing tools for companies to use in preventing conflict through investment in the environment<sup>14</sup>.

Last, **IUCN should offer its good offices and non-partisan advice to the governments of the region in designing a framework for cooperative management of the Caspian Sea resources, and it should advocate for involving oil companies in the process**. Ensuring the sustainable and equitable management of these two natural resources - oil and caviar - is vital to lasting peace in the Caspian.

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<sup>14</sup> See for example our work on Mining and Conflict for the Mining, Minerals and Sustainable Development project, at [http://www.iied.org/mmsd/mmsd\\_pdfs/jason\\_switzer.pdf](http://www.iied.org/mmsd/mmsd_pdfs/jason_switzer.pdf).

## Community-based sturgeon aquaculture Can it help?

M Taghi Farvar, Khadija Razavi and Roxanna Shapour

As a partial response to the survival crisis of the Caspian species of sturgeon, it is imperative to take the pressure off the sea and to create incentives for local communities to get involved in protecting the endangered sturgeon species. While a great part of this work needs to be done at the level of governments and international agencies to enforce existing regulations and conventions, much can also be done by local communities. If communities can arrive at regarding the sturgeon populations as their common property, like it used to be decades ago, they will be able to help in its conservation and sustainable use.

To this end the host institution for CEESP, the Centre for Sustainable Development in Iran, has proposed a community based sturgeon aquaculture approach on the coastal zones of the Caspian. The project would start in Iran and spread to other Caspian countries. Let us look at the idea:

### The basic idea

Local fishing communities in the coastal zones of the southern Caspian Sea would be helped to undertake sturgeon farming as a practical example of sustainable livelihoods and biodiversity conservation. A great deal of experience from other and similar areas would be used to jump-start the process. The work would start with the Great Sturgeon (*Huso huso*), and gradually include other species. Four sets of outputs are envisaged: a) sturgeon fingerlings, which can be produced starting with the first year, and which would be sold back to the National Fisheries Corporation for release into the Sea, b) sturgeon meat for national and international export within a few years, c) sturgeon eggs, which will take over a decade, and d) other species suitable for aquaculture.

### Justification

***The various populations of sturgeon species, unique to the Caspian, are under severe threat; at least one is nearly extinct. Catches throughout the whole area have decreased by 86% in the last two decades. Poaching, habitat destruction, pollution, and mismanagement are at the roots of this situation.***

The present project stresses the need for an immediate conversion from harvesting of wild sturgeon stocks to cultivation in order to help reduce pressure on wild stocks. The monopoly management systems practiced by the governments of the Caspian countries

## Community-based aquaculture... Can it help?

have not been able to impede the fast decline of the biomass of wild sturgeon stocks. This project proposes a community based management system for sturgeon fisheries.

Once the local communities are engaged in the project, it is expected that they will take an active part in the surveillance of the sturgeon stocks, and policing the waters to prevent poaching. The project will work in collaboration with all the relevant governments.

**Involved actors**

The Centre for Sustainable Development (CENESTA), the Sustainable Development Facilitators (SDF) and the International Sturgeon Research Centre would supply technical know-how, quality control, and the initial fingerlings, as well as possibly buy-back the new fingerlings for release into the Caspian. Several local communities in the three Caspian provinces of Iran would be involved from the start. The Caspian Environment Programme and international private industry have expressed a vivid interest in supporting the work. As the project advances, a number of other communities, both in Iran and other Caspian countries, would be added, together with civil society support organisations from those countries.

The authors are grateful to Dr. H Ghadirnejad for his technical advice in developing this draft.

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## Asking the fishermen: Prospects for participatory management of Danube sturgeon

Hugh Govan



**Trial RRA:** The RRA team try the RRA with fishermen at a fishing camp near Galati, Romania

The Danube sturgeon fisheries have historically been of great importance but in recent years both fishermen and official statistics suggest a dramatic decline. Political upheavals and the emergence of a large black market have made monitoring and management of the fishery a virtual impossibility. This article describes a project developed since 1999 that aimed to involve the fishermen in assessing the current state of the sturgeon stocks and the prospects for improved management regimes. The technical results of this project are described in N. Voderu et al. 1999 and further background in N. Voderu 2000 which should be referred to for further details.

**Sturgeon stocks under pressure**

The Danube sturgeon fishery occurs over a relatively large area covering four countries: Romania, Ukraine, Bulgaria and Serbia. Since the barraging of the Danube in 1959 and 1969 the fishery extends over some 100 km of the lower Danube and also the coast of the Black Sea adjacent to the delta.

Both scientists and fishermen suggest that the fishery is in a state of decline. In the 1990s and 2000s this fishery is recorded as having yielded between 10 and 90 tonnes of fish each year. In the last 10 to 20 years the official records show yields of between 10 and 20 tonnes per year.

However, gaining a useful insight into the actual status of the fishery was impossible until 1999 due to the lack of reliable data and management institutions.

Anecdotal but plausible evidence suggested that official catch records were erratic both geographically and over time representing possibly less than ten per cent of actual catches.

Factors that both aggravate the situation of the Danube sturgeon and impinge on remedial action include (N. Voderu et al. 1999):

# Asking the fishermen: Prospects for participatory management of Danube sturgeon

**Human impacts:** Sturgeon spawning habitat has been greatly reduced by the construction of dams as well as dredging and navigational activities. The water quality of the Danube has been affected by agricultural and industrial effluents, sometimes of catastrophic dimensions.

**Political:** Upheavals in the region over the last decade or so have in many instances removed central control and impacted the labour situation. The slow transition from state-control to private enterprise promotes a de facto open access regime.

**Socio-economic:** The low standard of living in many areas and the extremely high value of the caviar and sturgeon meat (encourages illegal and thus unrecorded fishing). It is worth noting that fishermen may receive

0- 0 US per kg of caviar, equivalent to the monthly salary in many areas. A large sturgeon could provide over 00kg of caviar.

Given the fundamental link between the fishermen and the status of the sturgeon stocks a participatory appraisal methodology became the central component of a World Bank financed project coordinated by the Danube Delta Institute, Nautilus Consultants and the University of Massachusetts.

(although market forces are of perhaps equal importance)

## Asking the fishermen

The project aimed to involve fishermen in obtaining realistic data on the sturgeon stocks and fishery and information supporting the development of realistic management options. This was to be supplemented by telemetric and genetic analyses in developing a short term management strategy.

The methodology adopted was based on Rapid Rural Appraisal as discussed in general by Chambers ( 99 ) and Pido et al. ( 99 ) for fisheries management and Townsley ( 99 ) for aquaculture. The appraisal tools were designed by Andrew Inglis and consisted of maps, timelines, seasonal calendars and matrices.

Six appraisal teams consisting of experts from national institutions and management agencies ( from Romania and one each from Bulgaria, Ukraine and Serbia) were trained in the essence of participatory techniques and the implementation of the survey. These training events also provided an opportunity to fine tune the survey tools.

Comprehensive information was sought in the survey including aspects such as fishing effort, places, times, gear and biology as well as socio-economic data, issues and opinion regarding management. Fisheries managers and other key players were interviewed separately.

The survey teams worked with fishermen at their fishing locations up and down the river and the Black Sea coast. A number of mechanisms were implemented to cross-check results (triangulation), facilitate data

reporting and collation and ensure quality control.

Collation and final interpretation of data was a huge task and required more manpower than expected. Due to the sensitive nature of much of the information, confidentiality was paramount and in some cases data which reflected illegal activities had to be deduced from qualitative techniques.

## and the fishermen speak

The most immediate results of the survey was perhaps mutual surprise. The fishermen were surprised that scientists and managers were interested to hear from them and in general collaborated fairly enthusiastically. The scientists were also surprised that the fishermen reacted positively to their approach and also at the depth and detail of the information that the fishermen provided. Thus one of the first results was the building of communication between fishers and managers.

The techniques were deemed to be an extremely cost-effective method for working towards sustainable management, particularly given the high cost and inconclusive results of the telemetric studies. A wealth of data relevant to management was obtained from the nearly 00 hundred fishers or fisher groups that were surveyed along the more than 00 km of river and coast. The detailed results of the survey are reported in N vodaru et al. ( 999).

Catches were found to be in the order of 00- 00 tonnes per year largely in Romania and Ukraine and involved more than ,000 fishermen. These data confirm initial impressions that catches were under-reported by about an order of magnitude in some areas and are supported by other data such as CITES export license applications.

A variety of fishing methods are used and a variety of fishing regulations exist but are barely enforced. These all vary greatly between countries as do the types of fishing rights which vary the state controlled system of Serbia to the entirely private one of Bulgaria.



Fishing: Fishermen setting a net on the Romanian Danube

## Asking the fishermen: Prospects for participatory management of Danube sturgeon

A number of indicators provided by fishermen indicate strong human impact on the habitat as well as providing convincing evidence for severe over-fishing such as decreasing catch size, decreasing length of landed fish and increase of fishing effort.

Important market information was obtained as well the confirmation of flourishing black markets in Romania and Ukraine. The value of the fishery to fishermen was estimated at around US \$ 1,000,000 per year although traders and intermediaries may be making up to double that. Full-time fishermen are extremely dependent on fishing although not necessarily on sturgeon but some poor rural communities are highly dependent on the sturgeon fishery and have few realistic alternatives.

Despite a general agreement that the key cause of the fishery decline was over-fishing, fishermen were guarded in their assessment of possible management options. However, many operate within teams, companies or cooperatives assigned to specific areas which are expected to be respected by other fishermen. In many cases these zones are maintained and vigorously defended.

### Prospects for involving fishermen in management

The results of analysis by the survey team and key officials from the participating countries would seem to strongly support co-management of the sturgeon fishery as the best option for the way forward (Navodaru et al. 1999). Some of the existing structures and operating practices could serve as a basis for consolidating co-management, such as cooperatives and defined fishing territories.

The alternatives to greater fisher participation in overall fishery management do not seem practicable at present, e.g. strong central control and rigorous policing, is well beyond the resources currently available to management authorities.

Co-management would need to be promoted at a number of levels. At the macro level an international commission comprising scientists, administrators and fishermen would be needed to oversee sturgeon management.

Sturgeon fishermen should be members of and appropriate local organisation such as a cooperative or association. Where these do not exist or are weak, institution building support would be needed in order for these groups to adequately represent the fishermen at the international commission.

Fishing use rights should be formally designated in the form of licenses to individual fishing units for designated zones. The criteria for license allocation should include historical criteria and the investment made in the fishery in order to ensure commitment to stewardship of the area.

Specific technical measures such as gear restrictions, closed areas and minimum/maximum sizes will be needed but should be based on both fishermen's and scientists' advice.

The great challenge to co-management arises from the fact that individual fishermen will only benefit from responsible fishing practices if the fishers in upstream and downstream zones are equally responsible. The international commission will need to have the means to monitor and control implementation in each area, funded partially by license takings. Local and regional control could operate at a regional district level, these districts are already in place in many instances.



Ukraine: Romanian fishermen sorting their catch with Ukrainian industrial facilities visible on the opposite shore.

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# A group of people lovers in the IUCN

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 CEESP Working Group on Collaborative Management of Natural Resources

The organisations and people affiliated with the IUCN are well known as nature loving. You can find them engaged in all sorts of initiatives to conserve species, habitats and precious landscapes, often in fact as their main occupation and expertise. What is perhaps less well known is that most such nature-loving individuals and organisations also nourish a great passion for *people*. People, it is true, can be the enemies of the environment, but they can also be their caretakers, appreciators, careful managers. Ingenious interactions between human communities and their environments have shaped the livelihoods of all our ancestors and given birth to all different expressions of culture, art, science, wealth including conservation as we know it. Indeed, if we pay enough attention to people, environmental problems can be prevented, and more equitable, effective and sustainable decisions can be developed and applied. This passion about people is particularly lively among some groups within IUCN, one of whom is the Commission on Environmental, Economic and Social Policy (CEESP). Within the Commission, a Working Group on Collaborative Management of Natural Resources (CMWG) has been active now for over six years, learning and consolidating itself along the way.

Most members of the CM working group are field practitioners. They work in a variety of situations where sound or unsound choices about people have direct and generally apparent impacts on nature and natural resources. They learn from their experience, exchange and discuss their lessons with others and attempt to consolidate such learning into more appropriate policies, more intelligent and fairer ways to approach the same issues and problems in the future. This is why they are affiliated with the group to have a chance to exchange ideas and work together with like-minded colleagues, to learn and act together, to be collectively stronger, and more relevant and effective. These practitioners are natural resource managers, researchers, consultants, trainers, staff of conservation and development agencies, policy makers, writers, scientists, social activists. In general, they cultivate both the biological and the social sciences and appreciate the advantages of multi-disciplinary perspectives. Many of them are acutely aware of the need to revitalise and strengthen traditional natural resource management institutions, and active about doing it. They have a strong commitment to social justice and participatory approaches and you find them in the midst of communities all over the world, facilitating participatory planning exercises, helping to develop agreements over resource management problems, promoting social communication and advocating more equitable policies. The crucial thematic interests of the members of the CMWG is collaborative management what some of them call the practice of pluralism, or democracy, in managing natural resources. Simply put, collaborative management regimes are characterised by various social actors and thus various views, interests and concerns working together to decide and take action about how to manage a body of natural resources. In the Galapagos Marine Reserve (Ecuador), a member of the CMWG has been facilitating a four-year process by which new

legislation and pluralist institutions have been put in place. Conflicts, such as heated controversies between local fishermen and conservationists over fishing permits, have been dealt with through dialogue, the search for consensus decisions and an adaptive management approach. In Madagascar, a member is directing a national programme to facilitate pluralist institutions at regional and sub-regional level in charge of preserving unique biodiversity in some of the poorest areas in the world. In the USA, CMWG members promote Land Use Trusts among land owners, state governments and local conservation groups. A member from India is training in CM practices professionals from East Africa. A member from Denmark is researching conditions of success for participatory institutions in Thailand. In Romania, a CMWG member is heading a Park Management Authority striving to involve civil society in the care of the country's most famous protected area. In Yemen, a CMWG member in charge of all conservation initiatives for the unique island of Socotra is preparing the conditions for its co-management regime with local traditional communities. In Central America, project proposals are being developed to support regional initiatives. Members from Congo Braïville, Cameroon, Iran and Italy developed together a CM text of reference, now translated in several languages and used in the field from Mongolia to Braïl, from France to New Zealand. It is not easy to convey the richness of personal involvement and common initiatives of the members of the CM Working Group, in part also because the group does not have much in terms of rules or fixed expectations. The members take advantage of the existence of the group and contribute to its work following their individual opportunities and inclinations. It would be hard to do otherwise, as the CMWG is a team of volunteers, who dedicate their energy and experience for the sake of conservation with equity. Indeed, they show both a passion for nature and a passion for people

*For more information on the IUCN/CEESP Working Group on Collaborative Management, please consult the site <http://ceesp.cenesta.org/> and follow the indications for the CMWG. The most recent issues of the newsletter of the group (CM News) are available at the site, as well as descriptions of its mission, structure and current activities, publications on line and a number of articles and reports from individual members ("the Inspiration Corner"). This note was written by Grazia Borrini-Feyerabend, the CMWG Chair. Hugh Govan, the author of the preceding article "Asking the fishermen: prospects for participatory management of Danube sturgeon" is the member of the CMWG Steering Committee with responsibility for CM in coastal and marine resources.*

# Having your cake and eating it, too!

.....  
 CEESP Working Group on Sustainable Livelihoods

The relationship of poverty and environmental conservation has been debated for a long time both within and beyond the World Conservation Union, and the spectre of poor people attacking natural resources has haunted conservationists for a long time. Can impoverished communities afford conservation? Are poor people the worst enemies of the environment? Is population growth the main cause of damage to the world's natural resources? CEESP sees the Sustainable Livelihoods approach as providing thoughtful answers to such questions, the opposite of a scary vision of the world, where some experts create neat and deceiving perceptions that it is the poor who destroy the environment and the rich who value it and preserve it. The SL approach is the place where efforts to conserve biodiversity and end poverty come to meet, with the sustainable use of biodiversity for poverty alleviation as the link which unites and promotes these two overriding objectives.

The Sustainable Livelihoods approach rests on three fundamental pillars:

1. Community empowerment including being in charge of local participatory action research processes and fully involved in all decisions affecting community life, including managing natural resources and creating local community wealth;
2. Satisfaction of community needs (what some also refer to as locally-defined development and fight against poverty), and
3. Conservation of biodiversity and other natural resources ensuring the integrity and health of ecosystems, species and genetic resources, the preservation of cultural landscapes and ecosystem services (soil regeneration, water regulation, maintenance of the local climate, etc.) and the equitable and sustainable use of natural resources.

The **Working Group on Sustainable Livelihoods (WGSL) of CEESP** is concerned with local aspects of environmental sustainability and community well being, in other words with all three pillars mentioned above.

The group was established to help develop environmental, economic and social policies in favour of sustainable livelihoods in different socio-cultural and natural contexts. It is a tenet of the Group that such policies need to be based on the real life experience of local communities and their needs and aspirations, and to accommodate their socio-cultural and ecological diversity.

The WGSL thus aims to develop, achieve, support and demonstrate context-specific solutions to local environmental and livelihood problems and, from such experience, to draw appropriate lessons for policy.

## Scope

WGSL is hosted by CENESTA under the supervision of the CEESP Chair. It is currently developing the following:

1. A network of concerned conservation and development professionals including traditional male and female

community elders and institutions (non-governmental and community-based organisations) that will be involved in developing policy advice for the Union and beyond on the basis of lessons learned from the field sites (see below). The network links with other existing sustainable livelihood networks including the ones promoted by the RING, SID, UNDP, CARE, UNEP and various bilateral institutions and others.

2. A network of field sites where local communities are engaged in sustainable livelihood practices and concrete initiatives. With time, coverage will involve a wide variety of biomes, cultures and economic systems (traditional and modern) and a process of learning by doing in various components of sustainable livelihoods (animal husbandry and range management, fisheries, non-chemical management of agricultural production and pests, small scale industry, renewable energy production, consumptive and non-consumptive uses of wildlife, eco-tourism, community services, primary health and environmental care, etc.)

## Strategy

More details on the strategy and work of the WGSL is found on the CEESP web site (start with [www.iucn.org](http://www.iucn.org), or go directly to <http://ceesp.cenesta.org>).

The first step in the work of the WGSL in the field is to help interested local communities to **identify, understand and successfully tackle their key problems and opportunities**, and to develop participatory insights into what a community knows and does including especially its patrimony of local, traditional and indigenous knowledge and expertise in the management of natural resources. This understanding has to be oriented towards community empowerment, not the extraction of information for outside researchers.

The second step of the approach is to improve the capacities of local **communities to organise themselves**. For instance, some communities may decide that their first need is to organise around a wealth-generating activity. Others may need to begin by solving a major problem such as obtaining a reliable supply of potable water, or managing some major pests affecting their agricultural production in environmentally friendly ways. The WGSL will facilitate, on a case-by-case basis, the establishment of effective partnerships, assisting the communities to act and to learn practical and policy lessons in every step of the way.

The third step is to **take action**, with various degrees of external support, reflecting in an on-going way on results and consequences, and adjusting activities as appropriate. The method of choice is **participatory action research**, a cycle of reflection-action-reflection controlled and decided by the communities themselves. The WGSL provides methodological support to the participatory action research.

The fourth step is to **reflect**, among local and non-local actors, **on the policy implications** of the community-based successful practices, and to **draw concrete recommendations and products** from such reflections. The WGSL will assist local communities to draw their own

## Having your cake and eating it, too!

conclusions for future practice and supportive social conditions policies included.

The WGSLS pursues community-based experiences hand in hand with the analysis of traditional as well as merged traditional/ modern practices for sustainable livelihoods. The work requires ecological analysis in addition to an understanding of political, economic and socio-cultural conditions.

Ultimately, the sustainable livelihoods approach is about millions of local communities living in prosperity and peace within their diverse ecosystems. It is an approach for the poor as well as the rich, for the South as well as the North, which becomes alive through the initiatives of the civil society local communities, community-based groups and non-governmental organisations contributing innovations and experiences in their own ways. While the credit for most of the relevant initiatives goes to the civil society, governments, too, have an important enabling role to play with supportive policies and conditions based on learning from below, while refraining from applying a heavy and arrogant hand. In addition, communities can benefit immensely from the flow of information and know-how, and the political, legal, technical, cultural and financial support of other actors in society.

### Community-based initiatives

In order to arrive at a broad series of field based experiences from which to draw lessons and ideas for policy, CEESP works with a number of community based initiatives. Examples of this network include pilot community-based wealth generation experiences in Lake Chad, Cameroon and the Baluch coastal areas on the Indian Ocean, Iran; agricultural and pastoral initiatives in the Andean Highlands; livelihood security projects for Marsh Arabs in Mesopotamia; institutionalisation of co-management practices and regulations among fishing communities in Galapagos, Ecuador; community protected areas in Socotra Island, Yemen; participatory agricultural production and non-chemical pest management on the Caspian coastal zones and the Lake Chad area; utilisation of medicinal plants in the forests of Madagascar; design and use of alternative, local money in Mexico; redesigning of urban neighbourhoods for use of renewable energies in Malmö, Sweden; organic vector control in Africa; restoration of traditional knowledge and management systems in pastoral communities of East Africa; revitalisation of traditional landscapes in Italy; community budgeting in urban neighbourhoods in Brazil.

### Thematic studies

To complete these concrete field and community experiences, the WGSLS is also planning and/or already undertaking a series of thematic studies. So far, their subjects deal with sustainable community funding mechanisms based on product sharing, customary laws, practices and institutions for the management of natural resources, valorisation of biodiversity, community protected areas, watershed management and renewable energies for water supply, lighting and industrial production.

*For further information, please contact:*

*Roxanna Shapour*

*roxanna@cenesta.org*

## Does it pay to invest in environmental security?

.....  
CEESP Task Force on ENvironment and Security

### IUCN-IISD Environment and Security Projects:

#### -Task Force on Environment and Security:

What contribution can conservationists make in reducing the sources of human insecurity The peer-reviewed case studies and other documents produced by this task force, chaired by Ambassador Mohamed Sahnoun of Algeria, will go online in November at [www.iisd.org/](http://www.iisd.org/) security. A book summarising the results of this broad-ranging research effort and the presentations at the World Conservation Congress in Amman will hit the shelves in December or early January 2000.

#### -Business and Environment-Related Conflict

What are the links between natural resource extraction and conflict

What can companies do to reduce social tension In addition to substantive research for the Mining, Minerals and Sustainable Development Project of the World Business Council for Sustainable Development (paper available at [www.iied.org/mmsd](http://www.iied.org/mmsd)) we attended the recent UN Global Compact Dialogue on Conflict, September 2000 in Geneva.

#### -Environmental Strategies for Adapting to Climate Change

What contribution can conservation make in reducing the risk of disaster An expert task force led by Achim Steiner, DG of IUCN, and Ambassador Lionel Urst of Antigua, will seek to develop guidelines for using conservation of wetlands, forests and mangroves as tools for adapting to climate change. This project is a multi-partner effort with the Stockholm Environment Institute and the IUCN Climate Change Unit, with substantial contributions from the Worldwatch Institute. The first meeting of the task force is set for mid November in Geneva. The project team also presented its concept to the UN International Strategy for Disaster Reduction and its partner organisations, in early October.

*For further information, please contact :*

*Jason Switzer,*

*Project Officer,*

*IUCN-IISD Project on Environment and Security*

*[jswitzer@iisd.ca](mailto:jswitzer@iisd.ca)*



## Trade and investment, at what price?

.....  
 CEESP Working Group on Environment, Trade  
 and Investment

CEESP's Group on Environment, Trade and Investment (GETI) will maximise the use of IUCN's intellectual, analytical and structural strength to advance knowledge and respond to concerns of policy communities within and external to the Union. Two tracks will be pursued: one, an inward track aimed at enhancing and maintaining capacity within the Union to address the dynamic issues at the intersection of international trade and the Union's mandate. The second, the outward track will engage in further scrutiny of topics, which, despite their pressing nature, remain insufficiently attended.

The inward track will focus on issues of concern to the Commissions, Membership and Secretariat (the IUCN web ) in the relationship between trade policy and the root causes of biodiversity loss. It will work through focal points within the IUCN web . In the recent past IUCN's regional offices for Southern and Western Africa, South and Meso America, Vietnam and Europe have carried out work aimed at better understanding the interests of members in their regions with regards to trade or related areas, such as liberalisation of agriculture or the all-important relationship between IPR regimes and life forms. By identifying concerns, systematising existing related work and developing and elaborating material and strategies, GETI should have the necessary elements within a year to set up a permanent system of information exchange, dialogues, and research to enable and uphold IUCN's competence in the trade field.

Aware that many economists and other social scientists within the IUCN family are at the lead in the field of the Group, the intention of the second track is to engage them, along with young scholars and professionals, in deepening research on topics directly related to the Union's current programme objectives. Issues that require immediate attention in trade negotiations such as the bearing of international rules on instruments of environmental policy will be targeted, in addition to complex topics of sustainability that continue to be unsatisfactorily legislated through property rights or other inadequate global or regional regimes. Collaborative research will be designed to build on the International Centre for Trade and Sustainable Development (ICTSD)'s monitoring of trade policy and to add value to the already significant research activity in other quarters of IUCN affiliated organisations. Findings will be delivered in the form of policy options and in a policy-applied, or international-negotiations-relevant, form.

*For further information, please contact:*  
 Alex Werth  
 awerth@icts.d.ch

## What is IUCN's Sturgeon Specialist Group doing?

.....  
 M Pourkazemi

Sturgeons are one of the most lucrative aquatic species in the world that have lived for more than 150 million years and play a vital role in providing caviar, foreign exchange and employment to hundreds of fishermen. The Caspian Sea is one of the most important ecosystems that serves as the main habitat for the major stocks of sturgeons. Six species of sturgeons inhabit the Caspian Sea and provide more than 90 % of the world's caviar.

In the past decade sturgeon stocks have declined dramatically in their main habitats. The legal catch of these species have dropped from 26800 tons in 1981 to less than 3000 tons in 2000. The decreasing trends in these stocks during 1995 and 1996 were very severe and would have no doubt led to extinction of most of the commercially valuable species. The Sturgeon Specialist Group (SSG) in the IUCN considering the status of sturgeons proposed to include all sturgeon species in Appendix II of the CITES Convention as a solution to globally conserve these valuable species. Fortunately this resolution was accepted in the tenth meeting of CITES (CoP 10) held in Harare, Zimbabwe in June 1997 and has been put into action since April 1 1998.

These regulations have to a large extent controlled the illegal entry of caviar into the world market and have helped effectively to restore sturgeon stocks in their main habitats, particularly the Caspian Sea.

The SSG was re-organized in October 1999 and has since then with the collaboration of researchers, scientists and experts contributed towards the rehabilitation of sturgeon stocks through the exchange of views and experience. At present more than 40 members from different countries particularly sturgeon range states are working actively in the SSG.

The SSG held its first meeting on 9 to 11 February in Moscow with the main objective to promote restoration of sturgeon species in the wild and their natural habitats through development and implementation of appropriate conservation action (including sustainable use). The group is obliged to collect and assess information pertaining to sturgeons in the world. This assessment includes population and stock status of sturgeons, catch and exploitation methods, establishment of data bank and exchange of information in the regional, national and international level, discuss conservation needs and take essential scientific measures at the global level towards conservation of sturgeons. Sub committees have been established for

## What is IUCN's Sturgeon Specialist Group doing?

each of these aspects in order to conserve sturgeon stocks in their natural ecosystems.

Considering the worldwide distribution of sturgeons SSG members proposed to appoint two deputy chairs (for Eurasia and America) to assist and support the chair in compiling information in the relevant regions and provide operational plans for conservation and sustainable use of sturgeons.

In the second SSG meeting that was held during the 4<sup>th</sup> ISS at Oshkosh the SSG members proposed to establish 5 subcommittees for various disciplines within the SSG to cover a) Stock assessment and restocking, b) identification and genetic samples, c) aquaculture, d) CITES and sturgeon trade and e) Ecology and Environment. Members were associated to sub committees on the on the basis of their specialization and interest.

At present IUCN/SSG works in close collaboration with international organizations particularly CITES for exchange of scientific information. During the past four years SSG has participated actively in the significant trade review of 10 sturgeon species. Based on the information provided on ecological and biological status, catch and caviar trade scientific recommendations will be presented to the producer and consumer countries in the CITES Animals Committee Meeting. SSG is currently working on the significant trade review of four sturgeon species.

One of the other important activities of SSG is revision of the Red List for sturgeons for inclusion in the 2002 Red List.

The Sturgeon Specialist Group strives to employ existing scientific potentials and collaboration of researchers, scientists and those interested in sturgeons to raise the awareness of the serious situation facing sturgeon particularly in sturgeon experts, students and policy makers to prevent the extinction of these valuable species popularly known as living fossils.

*Dr M Pourkazemi (pkazemi\_m@yahoo.com) is the Chair of IUCN's Sturgeon Specialist Group (SSG) and the Director of the International Sturgeon Research Institute in Rasht, Iran. SSG which is a part of IUCN's Species Survival Commission, and CEESP's Working Group on Sustainable Livelihoods have agreed to collaborate on the community based aquaculture project proposed by CENESTA and the National Fisheries Corporation of Iran.*

## What is WMO doing in the Caspian region?

Ali-Mohammad Noorian

The World Meteorological Organisation (WMO) has set up a special programme for the Caspian Sea. Called the Coordinating Committee on Hydrometeorology and Pollution Monitoring of the Caspian Sea (CASPCOM), it has received financial support from the Italian government. The Sixth Session CASPCOM was just held in Obninsk, Russian Federation (3-4 October 2001) which was attended by the Caspian littoral states. The participants considered the priority problems encountered by these states most especially with regards to the pollution problems in the Caspian. There were many proposals given for the improvement of marine, coastal and river estuaries and oceanographic/marine observation networks, improvement of regional exchange of data and information, monitoring of contaminants and research activities in the Caspian Sea.

Collaboration among the Caspian littoral states in such areas of common interest will help them in building up the national capability of the member countries in the rush for the exploration and exploitation of marine resources. This is very important as the establishment of a coordinated system for the collection and exchange of hydrometeorological and oceanographic information on the state of the Caspian Sea environment and its pollution will assist Caspian Sea countries to solve economic, social and environment protection problems in the region.

The Coordinating Committee on Hydrometeorology and Pollution Monitoring of the Caspian Sea (CASPCOM) has also good cooperation with the Caspian Environment Programme (CEP) Steering Committee whose activities are focussed on pollution control, protection of biodiversity and fisheries and other bio-resources management.

The joint activities of the CASPCOM and CEP are expected to lead in preservation of some endangered and vulnerable species such as sturgeon. The Caspian Sea is the most important and major habitat of sturgeon fish which are the most valuable fish in the world. They are among the last remnants of pre-historic bony fish, whose bones softened and became cartilaginous during the course of time. Yet they have retained their original form. Sturgeons exist in oceans, lakes and rivers. The Caspian Sea provides for exceptional and ideal conditions including depth of water and moderate temperatures which have led to the concentration of sturgeon fish.

CEP will hold its next meeting from 31 October to 1 November 2001 in Moscow, Russian Federation.

*Dr. Ali-Mohamad Noorian (fax: +98-21-6025044) is the Second Vice-President of WMO and Chair of its CAPSCOM. He is also a Vice Minister of Transportation and Director of IRIMO, the Islamic Republic of Iran Meteorology Organisation.*

| <b>CEESP Steering Committee and Contacts</b>   |  |  |                               |
|--|--|--|-------------------------------|
| <b>No.</b>   | <b>Name</b>  | <b>Role/ area of responsibility</b>  | <b>Nationality/ residence</b> |
| <b>Themes and Working Groups</b>   |  |  |                               |
| 1.   | M. Taghi Farvar<br>( <a href="mailto:taghi@cenesta.org">taghi@cenesta.org</a> )                    | CEESP Chair,<br>Responsible for Sustainable Livelihoods  | Iran                          |
| 2.   | Alicia Bárcena<br>( <a href="mailto:abarcena@eclac.cl">abarcena@eclac.cl</a> )                     | CEESP Deputy Chair   | Chile                         |
| 3.   | Grazia Borrini-Feyerabend<br>( <a href="mailto:gbf@cenesta.org">gbf@cenesta.org</a> )              | Vice-Chair for Co-management of<br>Natural Resources<br>Co-chair of Joint Theme with WCPA on<br>Local Communities, Equity and<br>Protected Areas   | Italy/ Switzerland            |
| 4.   | Mark Halle<br>( <a href="mailto:mhalle@iprolink.ch">mhalle@iprolink.ch</a> )                       | Vice-Chair for Environment & Security  | USA/ Italy/ Switzerland       |
| 5.   | Ashish Kothari<br>( <a href="mailto:ashish@nda.vsnl.net.in">ashish@nda.vsnl.net.in</a> )           | Co-chair of Joint Theme with WCPA on<br>Local Communities, Equity and<br>Protected Areas   | India                         |
| 6.   | Ricardo Melendez<br>( <a href="mailto:rmelendez@ictsd.ch">rmelendez@ictsd.ch</a> )                 | Vice-Chair for Trade & Environment   | Colombia/ Switzerland         |
| 7.   | Rob Monro<br>( <a href="mailto:r.monro@virgin.net">r.monro@virgin.net</a> )                        | Sustainable use and CBD issues, link<br>with SSC   | Zimbabwe/ United<br>Kingdom   |
| <b>Regional Focal Points</b>   |  |  |                               |
| 8.   | Abdul Rahman Al-Eryani<br>( <a href="mailto:rahman@y.net.ye">rahman@y.net.ye</a> )                 | Arab Regions   | Yemen                         |
| 9.   | Pascal Girot<br>( <a href="mailto:pgirot@racsa.co.cr">pgirot@racsa.co.cr</a> )                     | Central America  | France/ Costa Rica            |
| 10.  | Jeff Gritzner<br>( <a href="mailto:jag@selway.umt.edu">jag@selway.umt.edu</a> )                    | North America  | USA                           |
| 11.  | Khawar Mumtaz<br>( <a href="mailto:khawarm@lhr.comsats.net.pk">khawarm@lhr.comsats.net.pk</a> )    | West and South Asia  | Pakistan                      |
| 12.  | James Murombedzi<br>( <a href="mailto:j.murombedzi@fordfound.org">j.murombedzi@fordfound.org</a> ) | Southern Africa  | Zimbabwe/ Southern<br>Africa  |
| <b>Staff contact person</b>  |  |  |                               |
| Roxanna Shapour<br>( <a href="mailto:Roxanna@cenesta.org">Roxanna@cenesta.org</a> )<br>5 Lakpour, Suite 24<br>Langary St, Nobonyad Square<br>IR-16936 Tehran, Iran |  | CEESP Executive Officer<br>Fax: +1 253 3228599 (USA-based<br>forwarding)<br>Phone: +98 21 2954217 (office)<br>and +98 911 2480136 (mobile)<br>CEESP web site:<br><a href="http://ceesp.cenesta.org">http://ceesp.cenesta.org</a> | Iran                          |

## On sturgeon and the new character of CEESP

...continued from page 2

I am also pleased to announce that the old joint CEESP/ WCPA Task Force on Local Communities and Protected Areas, chaired by Ashish Kothari, has now been upgraded to a joint WCPA/CEESP Theme/Working Group on Local Communities, Equity and Protected Areas, co-chaired by Ashish and Grazia. This represents a significant advance in serious inter-commission collaboration, which will help us prepare better for the World Parks Congress of 2003 and mainstream local communities and equity work in the heart of the Union.

Last but not least, I would like to welcome Roxanna Shapour ([roxanna@cenesta.org](mailto:roxanna@cenesta.org)). Roxanna is the new CEESP Executive Officer. She is based at CENESTA in Tehran, which is the host institution for CEESP.

*M Taghi Farvar is the Chair of CEESP and Coordinator of its Working Group on Sustainable Livelihoods. In the early 1970s, he was in charge of the Iranian side of an Iran-USSR joint Committee for the protection of the Caspian Environment. In 1996 he was member of an interdisciplinary UN Team who visited all Caspian countries and elaborated the first draft of the Caspian Environment Programme for GEF.*

### **Central Asia: Past, Present and Future**

**When:** 1 - 2 November 2001

**Where:** London, Brunei Gallery Lecture Theatre School of Oriental and African Studies, University of London

**More Information:** The Centre of Near & Middle Eastern Studies  
Rm 479, SOAS, Russell Square, London WC1H 0XG

Tel: 020 7898 4340/4490

Fax: 020 7898 4329

Email: [meconf@soas.ac.uk](mailto:meconf@soas.ac.uk)

#### **Registration rates:**

Corporate: £100

Individual: £40

RSAA/CNMES individual members & academics: £30

Full-time students: £10

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### **Ninth International Seminar on Central Asia and the Caucasus: The Caspian Sea; Prospects and Challenges**

**Where:** Tehran, Iran

**When:** 22-23 Dec. 2001

**Themes/topics discussed:** An evaluation of the impacts of various trends unfolding in the region will invariably affect the future of interactions and regional or international cooperation in this corner of the world. In the context of its triadic objectives of disseminating international relations literature, encouraging regional research and conducting studies on the Islamic Republic of Iran's foreign policy.

**More Information:** Centre for the Study of Central Asia and the Caucasus

Institute for Political and International Studies

P.O. Box : 19395/1793

Shahid Aghaie St. Shahid Bahonar Avenue Tehran, Iran

Tel: 2802671-75

Fax: 2802649

Email: [ipsis@dre-mfa.gov.ir](mailto:ipsis@dre-mfa.gov.ir)

Web Site: <http://www.dre-mfa.gov.ir>

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### **The 15th Annual APS Energy Conference & Exhibition: Middle East Energy Strategy to the Year 2014**

**When:** 16-18 February 2002

**Where:** Azadi Grand Hotel, Tehran, Iran

#### **Themes/Topics discussed:**

The Global Petroleum Perspective.

The Middle East Oil Reserves & Exploration Prospects.

The Oil Production Capacities, Technical Innovations & Costs.

The Developments After the Sept. 11 Attacks & the Implications for the Middle East.

Strategic Connections Between the Caspian and the Persian Gulf.

**More Information:** The participation fee is

US\$ 2,750 for the first delegate, US\$ 2,250 for each of the additional delegates from the same institution.

Participants can be accompanied by their spouses at no extra charge.

There is no discount for unaccompanied delegates.

The participation fee covers: APS Conference's help for participant & spouse to obtain Iran entry visas; attendance & the conference papers; full-board Azadi Hotel accommodation for participant & spouse from dinner on Friday Feb. 15. to lunch on Monday Feb. 18, 2002; a special programme for the spouses; and airport reception & airport-hotel-airport transfers. The spouses are expected to observe the Islamic dress code.

### **The Caspian: Addressing Obstacles on the Path to Prosperity**

**When:** Monday 18 Thursday 21 March 2002

**Where:** Wilton Park Conference

#### **Themes/Topics discussed:**

Which of the region's projects are likely to be commercially successful? What are the factors that will most influence future investment decisions? How can regional stability, good governance and economic growth best be assured? What policy adjustments do the influential players need to make to help achieve these goals?

**More Information:** Enquiries about participation and local travel to Mrs Jo Childs, Wilton Park, Wiston House, Steyning, West Sussex.

BN44 3DZ. Telephone: +44 (0)1903 817755

Fax: +44 (0) 1903 815244

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### **Coordinating NGO and Donor Priorities for Environmental Protection Projects in the Caspian: Selection of projects for the Caspian NGO Environmental Protection Investment Portfolio**

**Where:** Astrakhan, Russia

**When:** March 2002

The projects must be aimed at resolving regional environmental problems and relate to one of the following topics: Public environmental monitoring; Biodiversity conservation; Alternative paths for the economic development of the region (ecotourism, sustainable energy, sustainable agriculture, etc.); Monitoring TNC activities, public environmental assessments and hearings, legal initiatives and lawsuits; Intersectoral information exchange and environmental awareness.

The Portfolio will include only those projects, which have NOT YET received financial support. Conference participants will be selected from the pool of organizations that have submitted successful Portfolio applications. ISAR's Caspian program is able to finance the participation of five NGO representatives from each of the following countries: Azerbaijan, Georgia, Iran, Kazakhstan, Russia and Turkmenistan.

To participate in the competition, send a completed application to ISAR by November 15, 2001. Applicants must be members of community organizations.

#### **More Information:** ISAR

1601 Connecticut Avenue, NW, Suite 301

Washington, DC 20009

FAX: 202-667-3291

Email: [kwatters@isar.org](mailto:kwatters@isar.org)

ATTENTION: Kate Watters, Director of Programs

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### **46th meeting of the CITES Standing Committee**

**Where:** Centre international de conférences de Genève, Geneva, Switzerland

**When:** 11 -15 March 2002

**More Information:** <http://www.cites.org/>

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### **12th meeting of the Conference of the Parties to CITES**

**Where:** Santiago, Chile

**When:** 3 - 15 November 2002

**More Information:** <http://www.cites.org/>