TRANSPARENT STURGEON

Compliance, Traceability Issues and Illegal Trade in the European Sturgeon Market

Results of a WWF Market Survey in Bulgaria, France, Germany, Italy, Romania and Switzerland (2024-2025)



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Photo 1 © WWF

EXECUTIVE SUMMARY

Sturgeon products, particularly caviar, are considered to be largely sourced from legal production and to be traded in compliance with CITES regulations. This assumption is based on the rarity of wild sturgeons and the extensive control measures that have been introduced to regulate trade. However, evidence from seizure records, market surveys and forensic analyses indicates that poaching continues and that illegally sourced sturgeon products still enter commercial markets.

To assess the current compliance status of sturgeon trade in Europe, a survey was conducted across six selected countries representing key sturgeon range states as well as major centres of caviar production, trade and consumption: Bulgaria, France, Germany, Italy, Romania, and Switzerland.

A total of 158 sturgeon products were collected and subjected to physical examinations and forensic analyses. The majority of 133 samples were caviar products, while an additional 25 samples of sturgeon meat were collected and analysed in the range states Bulgaria and Romania.

This study demonstrates that compliance shortcomings remain widespread. Only 48% of the tested products (76 samples) showed no evidence of CITES-related violations or consumer deception. In contrast, **41% (65 samples) were associated with one or more CITES violations of varying severity and 11% (17 samples) exclusively with consumer deception.**

KEY FINDINGS

- 82 of 158 samples (52%) exhibited at least one compliance issue.
- Of these, 65 samples (41%) displayed one or more CITES violations, while 17 samples (11%) were associated solely with consumer deception.
- 15 caviar products (11% of 133 caviar samples) lacked mandatory CITES labels.
- 34 caviar products (26% of 133 caviar samples) showed deficiencies in CITES label fixation.
- 20 caviar products (15% of 133 caviar samples) carried incorrect CITES codes.
- 4 sturgeon products showed indications of likely wild origin.
- While some of the identified infringements were detectable through visual inspection, many CITES-related violations – such as incorrect species declarations and indications of illegal wild sourcing – as well as instances of consumer deception could only be revealed through forensic analyses.
- Online trade emerged as a major risk factor for traceability failures and illegal trade, highlighting the need for enhanced monitoring and enforcement.
- Illegal trade frequently involves transnational supply chains, underlining the importance of coordinated cross-border enforcement efforts and international cooperation.

INTRODUCTION

Having evolved more than 200 million years ago, sturgeons have outlived the dinosaurs. Yet today, these ancient fish are facing a conservation crisis. According to the International Union for Conservation of Nature (IUCN), sturgeons are considered the most critically endangered group of animals worldwide. Illegal fishing and trade remain among the most important threats to their survival.

Global efforts have progressively shifted legal caviar production from wild harvest to aquaculture, which has reduced pressure on natural sturgeon populations. Almost all legal caviar available in international markets today originates from farming operations. Nevertheless, the long-term investment required to produce caviar in aquaculture and the high economic value of caviar continue to create incentives for illegal activities, including poaching and trafficking, incorrect species declaration, product substitution and fraudulent marketing practices.

International sturgeon trade is regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[1]. The convention requires that all caviar be traceable through a standardised labelling and coding system. Each primary caviar container must carry a non-reusable label containing information about species, sourcing, country of origin, year of harvest/repackaging, and processing facility. Labels must seal the containers or provide other evidence if containers have been opened.

Within the European Union, these provisions are implemented through EU Wildlife Trade Regulations[2], under which CITES labelling is mandatory for all caviar containers, including products traded on domestic markets. Switzerland has established comparable requirements.

Effective enforcement depends heavily on the reliability of this traceability system. Failures of the labelling or coding directly undermine transparency and create opportunities for the introduction of illegal products into legal markets.

The present survey was conducted in six relevant European countries and aimed to assess compliance with CITES and related wildlife trade regulations in the European

[1] CITES Resolution Conf. 12.7 (Rev. CoP17) Conservation of and trade in sturgeons and paddlefish

[2] Council Regulation 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein; Commission Regulation 865/2006 of 4 May 2006 (as amended) laying down detailed rules concerning the implementation of Council Regulation (EC) No 338/97

sturgeon market, evaluate the effectiveness of the existing caviar labelling system, and identify weaknesses that may facilitate illegal trade and fraud in sturgeon products.

The need for such an assessment is underscored by the findings of earlier WWF studies, particularly a sturgeon market survey carried out in the Lower Danube region between 2017 and 2020[3, 4]. That assessment found that nearly one third of the collected sturgeon meat and caviar samples were traded illegally, while almost one fifth showed indications of originating from illegally caught wild sturgeons. More recently, an analysis of official enforcement data from this region documented seizures of at least 6.5 tonnes of illegal sturgeon meat and whole fish and 263 kilograms of illegal caviar between 2016 and 2025[5].

METHODOLOGY

Between **April 2024 and March 2025**, WWF collected **158 sturgeon** products from a range of retail outlets including restaurants, specialist shops, supermarkets and online platforms across six European countries. Caviar samples were gathered in all countries, specifically in the four key caviar importer and consumer countries in Europe – **France**, **Germany, Italy and Switzerland**. In **Bulgaria and Romania**, not only caviar but also meat samples were taken, since the two countries are important sturgeon range states where illegally harvested wild fish are more likely to enter domestic markets.

The survey included **133 caviar samples and 25 samples of sturgeon meat. A minimum of 25 samples were collected in each country.**

Three complementary methods were used:

- **Genetic analyses** were conducted to verify species identity and to determine whether products matched the information provided on CITES labels or at the point of sale.
- **Stable isotope analyses** were used to distinguish between aquaculture and potential wild origin based on the isotope signatures of the feed.

[3] Jahrl J., Boner M., Striebel B., Ludwig A. (2021): Evidence for trafficking of critically endangered sturgeon in the Lower Danube Region. WWF Austria & WWF CEE; 63pp
[4] Ludwig A., Jahrl J., Congiu L., Gessner J., Friedrich T., Lieckfeldt D., Peng Z., Boner M. (2023): Poaching and illegal trade of Danube sturgeons. *Current Biol.* 33, R1184-R1185. 10.1016/j.cub.2023.09.067
[5] Jahrl J. (2026): In the Net of Poachers: Ten Years of Documented Wildlife Crime Targeting Sturgeons in the Lower Danube Region (2016-2025). WWF CEE; 47pp

- **Physical examinations** of caviar containers and labels assessed compliance with CITES requirements.

The combination of these techniques allowed investigators not only to identify regulatory violations but also to detect potential illegal sourcing, product substitution and consumer fraud that would otherwise remain hidden.

Details on the methodologies of genetic and isotope analyses have been described in previous market surveys[3, 4].

For caviar samples, physical examinations additionally assessed the presence of CITES labels and codes, of label fixation and removability – including under humid or refrigerated conditions – and of features sealing the container or providing other evidence for any opening. In addition, the completeness, consistency and regulatory compliance of the CITES codes were verified.

RESULTS

CROSS-COUNTRY OVERVIEW OF ILLEGALITIES

Regulatory violations were detected in all six countries surveyed. The recurrence of similar violations across all countries suggests structural weaknesses within supply chains rather than isolated local incidents.

Most importantly, **four products displayed isotope signatures strongly suggesting a wild origin**.

Four caviar products had crossed international borders without required permits.

15 caviar products lacked mandatory CITES labels entirely, making traceability impossible.

The most common issue involved **incorrectly attached CITES labels**, which **occurred in 34 caviar samples**. Labels could either be removed without damage and potentially reused on other containers or attached in ways that did not necessarily indicate whether a container had been opened.

Incorrect CITES codes represented another major problem, **affecting 20 caviar samples**. In 18 of these cases, the species declared in the code did not correspond to the results of genetic analyses.

Table 1: ***Findings of violations of CITES Regulations in all six countries***

Categories	France (n=25)	Italy (n=25)	Germany (n=26)	Switzerland (n=27)	Bulgaria (n=25)	Romania (n=30)	Total (n=158)
Samples with indication of wild origin	0	0	0	2	2	0	4
Caviar imported without CITES permits	0	0	0	4	0	0	4
Caviar in container without CITES label	5*	0	3*	5	2	0	15
Caviar in container with incorrect CITES code	4	3	3	3	2	5	20°
Caviar mixed from different sturgeon species	0	0	2	0	0	0	2
Caviar in container with incorrectly fixed CITES label	9	7	1	8	6	3	34

* 3 samples were identified as artificial products
° 18 samples showed incorrect standard species codes

One sample may involve more than one CITES infringement and therefore be listed in several categories. Accordingly, the categories presented in Table 1 are not mutually exclusive and cannot be summed to determine the number of affected samples.

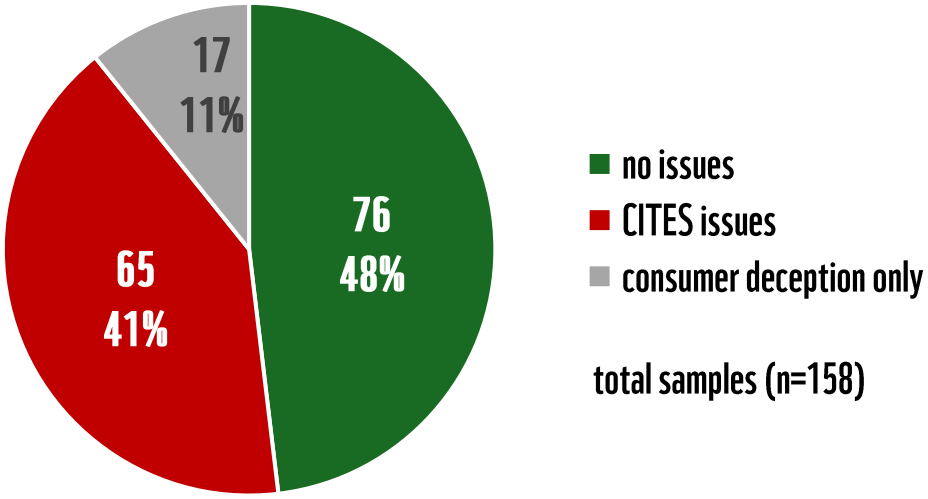
In addition, **consumer deception** was detected in most countries. In some of the above-listed cases, this occurred in conjunction with CITES-related violations, for example when counterfeit products were marketed as caviar. However, in a further 16 cases, consumer deception was documented in the absence of actual CITES infringement, such as when sturgeon meat was offered under incorrect species names by restaurant staff or on menus.

Across all 158 samples examined, 65 samples (41%) exhibited at least one CITES-related compliance issue, including 15 samples (9%) that displayed multiple issues.

In 17 samples (11%), consumer deception was found.

76 samples (48%) showed no detectable CITES violations.

Figure 1: ***Findings of compliance issues in all six countries***



Detailed information on all samples can be found in the Annex.

FRANCE

The French survey comprised 25 caviar samples. None of the samples was classified as originating from wild-caught sturgeons[6]. However, the market in France exhibited a **high number of shortcomings in traceability and consumer protection.**

Only nine samples (36%) showed no CITES-related compliance issues, whereas 16 samples (64%) exhibited at least one infringement.

Five samples did not bear any CITES labels. While three of these were in fact not caviar but artificial products (see below), two were genuine sturgeon caviar, yet no information on species, source, origin, etc. was provided on the containers.

Four samples showed incorrect species codes and nine exhibited deficiencies in the affixing of CITES labels.

Seven caviar samples were bought from online shops, all of which claimed to be based in France (websites with country code extension "fr"). Of these, all were objectionable for different reasons.

[6] One sample (TS_FR_27_1) exhibited an isotope pattern typically found in caviar from wild-caught sturgeon. However, feed samples provided by the French producer explained this pattern, and the sample was ultimately classified as consistent with an aquaculture origin.

A notable finding involved three products promoted online as “Beluga”, “Osciètre” and “Sevruga” caviar from Russian aquaculture. Genetic, microscopic and isotope analyses of the samples demonstrated that none of these products were actual caviar. No animal DNA could be detected, suggesting that the products consisted of artificial material of unknown composition. Yet they were clearly marketed as genuine sturgeon caviar, based on imagery, descriptions and packaging.

Another recurring issue was false information provided to consumers at point of sale. In several cases, retail staff described products as wild-caught or originating from prestigious sources such as Iran or Russia, while forensic analyses indicated farmed products likely originating from China.

ITALY

25 caviar samples were collected in Italy. None of them were assessed as being of wild origin[7]. Although comparatively fewer serious violations were identified than in some other surveyed countries, significant weaknesses in traceability and compliance were still revealed.

17 samples (68%) showed no detected irregularities, while 8 samples (32%) exhibited at least one CITES compliance issue.

Three products contained incorrect information in their CITES codes. Two of these were sold as pure species but genetically identified as hybrids. The third sample originated from Iran and was described as repackaged in Italy; however, the CITES code did not contain the mandatory repackaging identifier[8], resulting in a traceability inconsistency.

Seven caviar samples were packaged in ways that did not comply with CITES labelling standards.

A particularly illustrative case involved a restaurant owner who received detached CITES labels from a supplier and attached them independently to caviar containers. Such practices undermine the integrity of the CITES labelling system because labels

[7] One sample (TS_IT_MI_7_1) exhibited an isotope pattern typically found in caviar from wild-caught sturgeon. However, feed samples explained this pattern, and the sample was ultimately classified as consistent with an aquaculture origin.

[8] According to CITES Resolution Conf. 12.7 (Rev. CoP17) Annex 1 (e) the label must include “the official registration code of the repackaging plant, which incorporates the ISO two-letter code of the country of repackaging if different from the country of origin (e.g. ITwwww)”

are intended to be applied exclusively by registered processing or repackaging facilities[9].

The continued marketing appeal of wild caviar was also evident in Italy. In at least one case, retail staff promoted farmed caviar as originating from wild sturgeons, apparently assuming that this would increase its prestige and consumer demand.

GERMANY

The 26 caviar samples purchased in Germany displayed a diverse range of compliance failures, although none of the samples showed indications of wild origin.

Overall, 17 samples (65%) complied with CITES requirements, whereas 9 samples (35%) were associated with one or more CITES-related deficiencies.

Three products lacked CITES labels (explicitly sold as caviar but in fact artificial products – see below), three carried incorrect species codes, and one sample had an improperly attached CITES label.

Germany was the only surveyed country in which caviar samples consisting of mixtures of roe from different sturgeon species were identified. These two products originated from different German caviar companies, suggesting that this issue was not limited to a single producer or processor. Such mixtures are not permitted for caviar under current CITES and EU wildlife trade regulations[10] and therefore represent a compliance violation.

A particularly significant issue concerned the repeated occurrence of incorrect species declarations associated with a registered German caviar processing and exporting company. Five samples bearing the company's registration code, all originating from Iran, were purchased in different countries (Germany, France, Italy and Switzerland). All were labelled as "HUS" for beluga (*Huso huso*), yet genetic analyses showed that none consisted of pure beluga caviar. Instead, the products originated from other sturgeon species or hybrids, or from beluga hybrids. Particularly notable was the fact that four of the five samples carried identical CITES codes despite representing

[9] According to CITES Resolution Conf. 12.7 (Rev. CoP17) Annex 1 (c) "In the country of origin, the non-reusable label should be affixed by the processing plant to any primary container." or in Annex 1 (e) "…by the repackaging plant to any primary container in which caviar is repackaged"

[10] CITES Resolution Conf. 12.7 (Rev. CoP17) 2 (j) recommends that "caviar from different Acipenseriformes species not be mixed into a primary container, except in the case of pressed caviar (i.e. caviar composed of unfertilized eggs (roe) of one or more sturgeon or paddlefish species, remaining after the processing and preparation of higher quality caviar)."

different species compositions. These findings suggest either systematic mislabelling and/or substantial deficiencies in quality control and traceability procedures.

Germany also provided further evidence of the counterfeit caviar network identified in France (see above). Three products sold online as premium caviar from Russian aquaculture were found to contain no detectable animal DNA and originated from shipments sent from Romania.

SWITZERLAND

The 27 caviar samples collected in Switzerland showed the highest number of **serious irregularities** among the surveyed countries, **including strong indications that caviar may have originated from illegally harvested wild sturgeons.**

Only 7 samples (26%) appeared to comply fully with regulations. In contrast, 15 samples (56%) exhibited one or more CITES-related compliance issues, while an additional 5 samples (19%) were associated solely with incorrect or misleading information provided to consumers.

The most significant conservation concern involved two Iranian beluga (*Huso huso*) caviar products whose isotope signatures were inconsistent with typical aquaculture production. One sample showed a probability greater than 99% of originating from wild sturgeon, the other a probability of 90%. As Iran has not issued export quotas for caviar from wild-caught sturgeon since 2011, these findings merit further investigation and were reported to the Iranian CITES Management Authority.

A second major issue involved online purchases from a website presenting itself as Swiss. Four caviar samples ordered through the platform were ultimately shipped from the United States via Germany without accompanying CITES documentation. Containers lacked CITES labels, and the two separate consignments crossed several international borders without the permits required under CITES.

Furthermore, five caviar samples lacked CITES labels entirely, and three products carried incorrect CITES species codes (in one case, the code for the country of origin was also incorrect, and the year of harvest/repackaging was missing).

Eight samples exhibited labelling deficiencies; in most cases, the CITES label was attached in a manner that allowed it to be removed and reused.

For eight caviar samples collected in restaurants, verification of CITES labels and codes was not possible because the original containers were not available for inspection. Information on the declared sturgeon species or country of origin of the caviar

therefore relied exclusively on information provided by restaurant staff or menu. Genetic analyses revealed discrepancies in six of the eight samples, where the species or hybrid identified differed from that declared at the point of sale. In most cases, the species names provided to consumers generally referred to more traditional and prestigious types of caviar than those identified through genetic testing, suggesting potential misrepresentation to consumers.

In addition to the 27 tested caviar samples, a caviar product advertised as Iranian beluga caviar was ordered via Facebook Marketplace Switzerland. Although the offer appeared to originate from Lausanne, the seller was later identified as being based in Monaco. The product was never delivered, and the seller claimed that the shipment had been intercepted by Swiss customs authorities.

Switzerland therefore illustrates the challenges associated with international e-commerce and the need for closer transboundary enforcement cooperation. In addition, the survey identified problems related to non-compliant CITES coding and labelling, as well as inaccurate declarations of species identity in restaurants.

BULGARIA

In Bulgaria, 25 samples were collected. These included 14 samples of caviar and 11 samples of sturgeon meat. The survey revealed a **broad spectrum of compliance failures, including serious indications of illegal sourcing and non-compliance with national and international regulations.**

12 samples (48%) showed no irregularities, whereas 10 samples (40%) were associated with one or more CITES compliance violations and a further 3 samples (12%) involved exclusively consumer deception through incorrect species declarations.

The most important finding concerned two sterlet (*Acipenser ruthenus*) meat samples purchased in restaurants located along the Danube. Stable isotope analyses indicated a wild origin with a probability exceeding 99%, despite Bulgaria's permanent ban on fishing and trade of wild sturgeon. These results are consistent with earlier surveys that repeatedly detected wild-origin sturgeon meat on the Bulgarian market[3]. Notably, restaurants along the Danube, including one establishment that appeared in both surveys, were repeatedly associated with findings of sturgeon meat assessed as originating from illegally caught wild fish.

In this context, it is particularly noteworthy that both legally sourced aquaculture products and most likely illegal wild-sourced sturgeon appeared to be sold within the same restaurant. During the present survey at one establishment, a beluga sample was

assessed as originating from aquaculture, whereas a sterlet sample showed isotopic signatures consistent with a wild origin. A similar pattern had already been observed during a survey in 2017[3] when at the same restaurant, a meat sample purchased in spring was assessed as wild-caught, while another purchased in autumn was classified as farmed. This pattern may reflect the opportunistic availability of illegally sourced wild sturgeon, which depends on the success of illegal fishing activities. At the same time, the presence of legally sourced products alongside illegal ones may make detection more difficult, as proof of legal purchases can be presented during inspections even when illegal products are offered intermittently.

Of the 14 caviar samples purchased in Bulgaria, two lacked CITES labels, two carried incorrect species codes, and six exhibited labelling deficiencies, primarily removable CITES labels.

The survey revealed recurring compliance issues among some registered Bulgarian caviar processors. Problematic products linked to three companies were detected both domestically and in France. Particularly noteworthy was one processor for which all five sampled products showed deficiencies in CITES labelling and/or coding, indicating systematic rather than isolated compliance failures.

In three cases, the species declared by vendors differed from those identified through genetic analyses, indicating either insufficient product knowledge or deliberate consumer deception.

ROMANIA

The 30 sturgeon products collected in Romania consisted of 16 caviar samples and 14 sturgeon meat samples. Although no products could be linked to wild-caught sturgeons, the survey **identified extensive deficiencies in CITES coding and labelling, as well as widespread consumer deception.**

Overall, 14 samples (47%) showed no irregularities. 7 samples (23%) exhibited one or more CITES-related compliance issues, while a further 9 samples (30%) were associated solely with consumer deception.

Five caviar samples carried incorrect species codes, while three exhibited non-compliance in the fixation of CITES labels.

Incorrect coding or labelling was identified in products originating from three registered Romanian caviar processors and exporters. Particularly noteworthy was one company, regarded as a leading supplier in the Romanian caviar market: of six samples associated with this producer, four were not coded or labelled correctly. Similar

deficiencies have repeatedly been documented in products from this company since 2014, indicating persistent and unresolved compliance issues.

Consumer deception was documented in several cases. In one restaurant, a product marketed as “caviar” was identified as an artificial product made from sturgeon tissue rather than genuine caviar. Eight sturgeon meat products (57%) were sold under incorrect species names. One of the most striking examples involved a product sold as "sturgeon liver", which genetic analyses identified as European catfish.

Romania also emerged as a key element in the counterfeit caviar network identified during this survey, as shipments associated with artificial products sold in France and Germany originated from this country and payments were directed there.

COMPARATIVE ANALYSIS

Several broad patterns emerged across the six European countries included in the survey.

CITES-related compliance issues of varying severity were identified in all six countries surveyed, with the proportion of affected samples ranging from 23% to 64%. In addition, consumer deception was documented in several countries, either in combination with CITES-related violations or as the sole issue, with the latter affecting up to a further 30% of samples. The proportion of samples without detected irregularities varied considerably among countries and ranged from 26% to 68%.

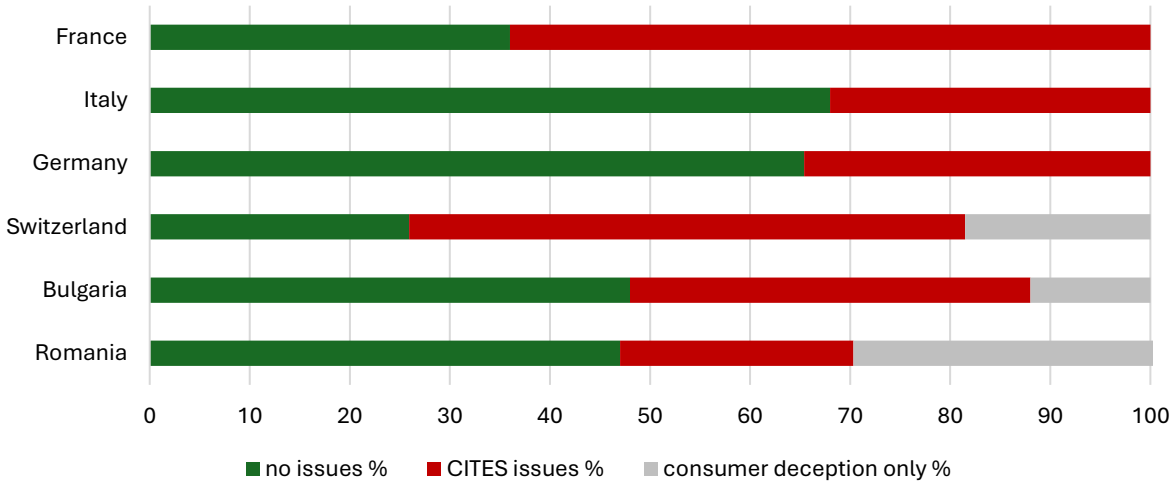


Figure 2: Percentage distribution of surveyed samples by country according to compliance status: no detected irregularities, CITES-related compliance issues, and consumer deception

The integrity of the CITES traceability system is weakened by widespread mislabelling

Missing or improperly attached CITES labels and incorrect CITES codes repeatedly undermined the reliability of official controls.

15 caviar samples (11%) in five of the surveyed countries lacked CITES labels and codes indicating species, source, country of origin, etc. These products are not compliant with CITES requirements, as CITES caviar labelling is mandatory for both domestic and international trade within all countries surveyed. The absence of these identifiers prevents traceability and hinders authorities from verifying the origin of the product. While missing labels may indicate counterfeit products, as observed in six cases, most of the affected samples were confirmed to be genuine sturgeon caviar.



Photos 2 & 3 © WWF

Sample TS_FR_17_1 without CITES label



Photos 4 & 5 © WWF

Sample TS_BG_23_3 without CITES label

34 caviar samples (26%) exhibited non-compliance in the affixing of CITES labels. Such deficiencies were recorded in all surveyed countries. The most common problem involved labels that could be removed undamaged and transferred to another container. Other recurring deficiencies included the absence of evidence indicating whether a container had been opened, either because seals (banderols) were missing entirely or because they were attached to only one side, allowing tins to be opened without breaking the seal.

20 caviar samples (15%) showed incorrect CITES codes, with cases identified


Photo 6 © WWF

Sample TS_CH_8_2 with reusable CITES label



Photo 7 & 8 © WWF

Sample TS_IT_MI_9_1 without evidence of any opening

in all surveyed countries. **In 18 cases, the species code was inconsistent with the results of the genetic analysis.** In many cases, products labelled as prestigious species such as beluga were genetically identified as different species or hybrids.

Wild-caught sturgeon is still reaching European markets

Although almost all sampled sturgeon products originated from aquaculture, four products exhibited characteristics that raised concerns about the possible trade in wild-caught sturgeons: **Two samples of Iranian beluga (*Huso huso*) caviar collected in Switzerland and two sterlet (*Acipenser ruthenus*) meat samples from Bulgaria exhibited isotope signatures inconsistent with aquaculture production and indicative of high likelihood of wild origin.**

These findings are particularly significant given the highly threatened status of sturgeons and consequential prohibitions on international trade in wild-caught Caspian sturgeon caviar from Iran, as well as on the capture and trade of wild Danube sturgeons in Bulgarian waters.

Online trade emerged as a major risk factor

Across all surveyed countries, online purchases generated a number of problematic results. This included caviar lacking CITES labels or shipped across borders without the required CITES permits, misleading product descriptions, counterfeit products, and sellers whose actual country of operation differed from the location presented on their websites.

The rise in online offers gives cause for concern that illegal trade in caviar – and other wildlife – is increasingly using this channel. Online sellers can operate across jurisdictions and use intermediaries and complex shipping routes that complicate investigations.

Consumer deception is prevalent

Beyond conservation concerns, the survey revealed a remarkable level of consumer deception. In each country and in both retail and gastronomic settings, caviar and sturgeon meat were marketed using inaccurate information regarding species, country of origin or sourcing. Premium names such as Beluga, Russian or Iranian caviar continued to be used as marketing tools irrespective of factual accuracy.
Consumer deception may constitute fraud, especially in cases where it is done consciously and with the clear intention of personal gain.

Artificial products are sold as sturgeon caviar

A striking finding was the detection of artificial products marketed as sturgeon caviar in three of the countries surveyed.

Six of these products were purchased as sturgeon caviar from websites targeting consumers in France and Germany. All containers lacked CITES labels and contained

material that was no fish roe and showed no detectable animal DNA. Nevertheless, they were packaged in typical caviar tins and advertised using images and descriptions of sturgeon farms.



Samples TS_FR_31_1-3



Sample TS_RO_29_1

Another counterfeit product was sold as "caviar" in a restaurant in Romania. Genetic analysis detected only traces of sturgeon DNA, indicating that the sample was an artificial product made from sturgeon tissue rather than genuine caviar.

As the composition of these products could not be determined, potential risks to consumer health cannot be excluded.

The majority of violations transcended national boundaries

Many of the compliance deficiencies identified in this survey had a transnational dimension. Sturgeon caviar produced or processed in one country was frequently sold in another.

The free movement of goods within the EU may facilitate the circulation of non-compliant products, as routine border controls are generally absent. However, two online caviar consignments entered Switzerland from the United States via Germany without the required CITES documentation and passed undetected through customs controls, highlighting weaknesses in cross-border enforcement.

The cases of counterfeit products marketed online as caviar from Russian aquaculture, which were identified in both France and Germany (and possibly also in Austria, which was not part of the survey), further illustrate the transnational nature of illegal caviar trade. The occurrence of identical products in two surveyed countries, with shipments originating from and payments directed to a third country, Romania, suggests the existence of a coordinated European network dealing with counterfeit caviar and may indicate organized criminal activity.

Certain caviar processors were repeatedly associated with non-compliant products

Recurring compliance deficiencies were linked to individual registered caviar companies. In Romania, four of six samples associated with a leading caviar supplier

were incorrectly coded or labelled. All five samples linked to one German processor and sold in four countries were marketed as beluga caviar but identified as other sturgeon species or hybrids. All five samples associated with one Bulgarian processor, purchased in Bulgaria and France, showed deficiencies in CITES coding and/or labelling.

RECOMMENDATIONS

The survey identified serious systemic weaknesses that undermine the effectiveness of current traceability and enforcement systems. These findings support several priority actions:

ENHANCE TRACEABILITY IN CAVIAR TRADE

National authorities should ensure that all actors involved in caviar trade, including producers, processors, retailers, importers and exporters, comply fully with CITES labelling requirements. Labels should be non-removable, tamper-evident and resistant to environmental conditions encountered during storage and transport. Codes must be correct, complete and readable.

However, current paper-based CITES labels remain vulnerable to manipulation. In addition, the current coding system can only accommodate limited information, for example, it does not provide details on the production history.

In Conf. 12.7 (Rev. CoP17)[1] it is acknowledged that "anticipated technological advances in marking systems" should be taken into account "in order to assist the Parties in identifying legal caviar in trade". Modern technology such as a QR-code-based traceability system could significantly improve transparency by linking products to detailed production and supply-chain information. Combined with an appropriate digital information system, this technology could substantially strengthen traceability and help reduce illegal trade and fraud.

Based on the analysis of the benefits and drawbacks of QR codes as part of the universal labelling system for trade in and identification of caviar under CITES, prepared by the CITES Secretariat[11], the feasibility and effectiveness of this approach should be evaluated through pilot projects involving selected producers or countries before wider implementation is considered.

[11] CITES Working Document SC 78 Doc. 59 Labelling system for trade in caviar – Annex: Benefits and drawbacks of QR codes as part of the universal labelling system for trade in and identification of caviar under CITES

STRENGTHEN ENFORCEMENT AND NATIONAL AND INTERNATIONAL COOPERATION

More frequent inspections of sturgeon products at all stages of domestic and international trade, combined with increased random testing, are needed to detect irregularities and improve compliance. Particular attention should be given to operators repeatedly associated with non-compliant products.

Enhanced information exchange among CITES authorities, customs services, food inspection bodies and criminal investigators is essential.

Many of the non-compliance cases identified in this survey involved multiple countries. Coordinated cross-border investigations should target suspicious suppliers and distribution networks. Information exchange through established mechanisms such as EU-TWIX (Europe Trade in Wildlife Information eXchange database: www.eu-twix.org) can substantially support the detection and investigation of transnational wildlife crime.

EXPAND FORENSIC CONTROLS

The application and combination of genetic and isotope analyses revealed shortcomings that would not have been detectable through conventional inspections alone. This suggests that these technologies should become routine components of random testing and market surveillance programmes to detect products derived from wild sturgeons and verify species identity.

IMPROVE ONLINE MARKET MONITORING

Online trade presents growing challenges for enforcement authorities. Sellers frequently operate across jurisdictions, often masking their true identities and locations. This significantly complicates investigations and prosecution.

Authorities should carry out or commission regular screening of online marketplaces, targeted test purchases and forensic analyses of random samples, and conduct coordinated investigations of suspicious sellers. Online sellers and platform operators should be required to retain transaction records and cooperate with enforcement authorities.

ANNEX

Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
FRANCE						
TS_FR_2_1	BAE/C/FR/2024/FR75118007R/9252	**BAE**	**BAE**	**C**	**C (>99%)**	**yes**
TS_FR_2_2	GUE/C/BG/2024/FR75118007R/9249	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_FR_2_3	STE/C/BG/2024/FR75118007R/9205	**STE**	**STE**	**C**	**C (>99%)**	**yes**
TS_FR_4_1	SCHxDAU/C/CN/2024/DE-R11/CQX3971L	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**no - reusable**
TS_FR_4_2	BAExSCH/C/CN/2024/DE-R15/SCXL24042001	**BAExSCH**	**BAE(/GUE)xSCH**	**C**	**C (>99%)**	**yes**
TS_FR_5_1	SCH*DAU/C/CN/2024/DE-R15/SCXL24102901	**SCHxDAU**	**(SCHx)DAU**	**C**	**C (95%)**	**yes**
TS_FR_6_1	GUE/C/CN/2024/FR94041320R	**GUE**	**GUE**	**C**	**C (>99%)**	**no - can be opened without evidence**
TS_FR_9_1	BAE/C/FR/2024/FR24309005T/C311FRFRR	**BAE**	**BAE/GUE**	**C**	**C (>99%)**	**no - reusable**
TS_FR_9_2	GUE/C/FR/2024/FR24309005R/C311FRFRR	**GUE**	**GUE**	**C**	**C (95%)**	**no - reusable**
TS_FR_9_3	HUS/C/IR/2024/DE-R18/692	**HUS**	**GUE**	**C**	**C (>99%)**	**unclear**

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_FR_10_1	GUE/C/CN/2024/PT-001/00549	GUE	SCHxDAU	C	C (>99%)	no - reusable
TS_FR_13_1	GUE/C/BG/2024/FR75118007R/9250	GUE	RUT/BAE	C	C (>99%)	yes
TS_FR_15_1	not shown (restaurant)	*BAE**	BAE/GUE	*C**	C (>99%)	unknown
TS_FR_17_1	no CITES code	no information	DAU	*W**	C (>99%)	no - missing
TS_FR_20_1	BAE/C/PL/LV0005/22415	BAE	BAE/GUE	C	C (>99%)	no - can be opened without evidence
TS_FR_25_1	not shown (restaurant)	*BAE**	BAE/GUE	no information	C (>99%)	unknown
TS_FR_26_1	GUE/C/FR/2023/FR17331003T/S40380022	GUE	GUE	C	C (>99%)	yes
TS_FR_27_1	BAE/C/FR/2024/FR17331003T/S40120012	BAE	BAE/GUE	C	W (89%)°	yes
TS_FR_28_1	BAE/C/BG/2024/BG204110768/5	BAE	GUE	C	C (>99%)	no - reusable
TS_FR_29_1	STE/C/IT/2024/FR24309005R/C351ITITR	STE	STE	C	C (>99%)	no - reusable
TS_FR_30_1	no CITES code	*GUE**	GUE	no information	C (>99%)	no - missing
TS_FR_30_2	GUE/C/BG/2024/BG1613010/00112403/26112024	GUE	GUE	C	C (>99%)	no - no seal/other evidence of opening
TS_FR_31_1	no CITES code	no information	artefact	*C**	artefact	no - missing
TS_FR_31_2	no CITES code	no information	artefact	*C**	artefact	no - missing

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_FR_31_3	no CITES code	no information	artefact	*C**	artefact	no - missing
ITALY						
TS_IT_MI_1_1	GUE/C/CN/2024/DE-R11/CQX2773L	GUE	GUE	C	C (>99%)	yes
TS_IT_MI_2_1	HUS/C/IR/2024/906/G02P220F	HUS	HUS	C	C (>99%)	no - no seal/other evidence of opening
TS_IT_MI_3_1	SCH*DAU/C/CN/2024/DE-R15/SCXL24042001	SCHxDAU	SCHxDAU	C	C (>99%)	yes
TS_IT_MI_4_1	TRA/C/IT/2024/384/14364802	TRA	TRA	C	C (>99%)	yes
TS_IT_MI_5_1	GUE/C/BG/2024/IT0003/A006524	GUE	GUE	C	C (>99%)	yes
TS_IT_MI_6_1	GUE/C/GR/2024/GR REMTH EX 000009/000078	GUE	GUE	C	C (86%)	yes
TS_IT_MI_7_1	TRA/C/IT/2024/384/14544037	TRA	TRA	C	W (98%)°	yes
TS_IT_MI_7_2	GUE/C/IT/2024/384/27843825	GUE	GUE	C	C (>99%)	yes
TS_IT_MI_8_1	GUE/C/IT/2024/P7Z8P/05324289002	GUE	HUSxGUE	C	C (>99%)	yes
TS_IT_MI_9_1	HUS/C/CN/2024/IT0001/6851/2024/395	HUS	HUS	C	C (>99%)	no - reusable
TS_IT_MI_10_1	not shown (restaurant)	*BAE**	BAE/GUE	no information	C (>99%)	unknown
TS_IT_MI_11_1	BAE/C/IT/2025/K328M/0440	BAE	BAE/GUE	C	C (>99%)	yes
TS_IT_MI_12_1	HUS/C/IR/2024/DE-R18/692	HUS	HUSxGUE	C	C (>99%)	no - no seal/other evidence of opening

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_IT_MI_13_1	GUE/C/GR/2024/GR REMTH EX 000009/000113	**GUE**	**GUE**	**C**	**C (63%)**	**unknown**
TS_IT_MI_14_1	HUS/C/IR/2024/735/G023P0624/F3925-03	**HUS**	**HUS**	**C**	**C (>99%)**	**no - reusable**
TS_IT_RM_1_1	GUE/C/FR/2024/FR78439004R/051424164/289	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_IT_RM_2_1	GUE/C/CN/2024/DE-R02/311024Z	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_IT_RM_3_1	GUE/C/BG/2024/IT0003/A006524	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_IT_RM_4_1	TRA/C/IT/2024/384/17244581	**TRA**	**TRA**	**C**	**C (>99%)**	**yes**
TS_IT_RM_5_1	TRA/C/IT/2024/384/15024045	**TRA**	**TRA**	**C**	**C (>99%)**	**yes**
TS_IT_RM_5_2	not shown (restaurant)	**no information**	**TRA**	**no information**	**C (>99%)**	**unknown**
TS_IT_RM_6_1	BAE/C/IT/2024/14….(not fully readable)	**BAE**	**BAE**	**C**	**C (>99%)**	**unclear**
TS_IT_RM_8_1	STE/C/IT/2024/384/44674842	**STE**	**STE**	**C**	**C (>99%)**	**no - reusable**
TS_IT_RM_8_2	GUE/C/IT/2024/384/47104014	**GUE**	**GUE**	**C**	**C (99%)**	**no - reusable**
TS_IT_RM_8_3	HUSxNAC/C/IT/2024/384/44674110	**HUSxNAC**	**HUSxNAC**	**C**	**C (>99%)**	**no - reusable**
GERMANY						
TS_DE_1_1	SCHxDAU/C/CN/2024/DE-R01/247283	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_DE_3_2	GUE/C/PL/2024/DE-R12/RE202452189	**GUE**	**BAE/GUE**	**C**	**C (>99%)**	**yes**

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		declared	identified	declared	idendified	
TS_DE_6_3	GUE/C/DE/2024/DE-R01/247583	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_DE_7_4	HUS/C/IR/2024/DE-R18/692	**HUS**	**HUSxGUE**		**C (>99%)**	**yes**
TS_DE_8_5	not shown (restaurant)	**no information**	**SCHxDAU**	**no information**	**C (>99%)**	**unknown**
TS_DE_9_6	SCHxDAU/C/CN/2024/DE-R11/CQX4481L	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_DE_9_7	GUE/C/CN/2024/DE-R11/CQX5215L	**GUE**	**BAE/GUE**	**C**	**C (>99%)**	**yes**
TS_DE_9_8	BAE/C/PL/2024/DE-R11/GRG0524L	**BAE**	**BAE/GUE**	**C**	**C (>99%)**	**yes**
TS_DE_10_9	SCHxDAU/C/CN/2024/DE-R06/E-04726/23	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_DE_11_10	HUS/C/IR/2024/DE-R18/692	**HUS**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_DE_12_11	GUE/C/CN/2024/DE-R06/E-04236/24	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_DE_13_12	SCHxDAU/C/CN/2024/DE-R06/E-02371/24	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_DE_14_13	GUE/C/DE/2024/DE-R01/247511	**GUE**	**mix HUS & GUE**	**C**	**C (>99%)**	**yes**
TS_DE_15_14	not shown (restaurant)	***GUE****	**GUE**	***C****	**C (>99%)**	**unknown**
TS_DE_17_15	BAE/C/PL/2024/DE-R11/GRG1024L	**BAE**	**BAE/GUE**	**C**	**C (>99%)**	**no - reusable**
TS_DE_21_16	SCHxDAU/C/CN/2024/DE-R06/E-04396/24	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_DE_23_17	HUS/C/DE/2024/P09/4348	**HUS**	**HUS**	**C**	**C (>99%)**	**yes**
TS_DE_23_18	GUE/C/DE/2024/P09/4350	**GUE**	**mix HUS & GUE**	**C**	**C (>99%)**	**yes**
TS_DE_27_19	BAEXSCH/C/CN/2024/BE-VE5526/2	**BAExSCH**	**BAE/GUExRUT**	**C**	**C (>99%)**	**yes**
TS_DE_28_20	not shown (restaurant)	***GUE****	**GUE**	***C****	**C (>99%)**	**unknown**
TS_DE_32_21	BAE/C/DE/2024/DE-R01/25018(0?)	**BAE**	**GUE/BAE**	**C**	**C (>99%)**	**yes**
TS_DE_33_22	BAE/C/DE/2024/P16/241220RFT1	**BAE**	**GUE/BAE**	**C**	**C (>99%)**	**yes**
TS_DE_34_23	HUS/C/DE/2024/P01/P262	**HUS**	**HUS**	**C**	**C (>99%)**	**yes**
TS_DE_35_24	**no CITES code**	***HUS****	**artefact**	***C****	**artefact**	**no - missing**
TS_DE_35_25	**no CITES code**	***GUE****	**artefact**	***C****	**artefact**	**no - missing**
TS_DE_35_26	**no CITES code**	***STE****	**artefact**	***C****	**artefact**	**no - missing**
SWITZERLAND						
TS_CH_2_1	GUE/C/FR/24/CH03RE/FR2402400147-E	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_CH_3_1	HUS/C/IR/2024/DE-R18/03729/0811	**HUS**	**GUE**	**C**	**C (>99%)**	**yes**
TS_CH_4_1	GUExBAE/C/BE/2024/VE3098/X0007	**GUExBAE**	**GUE** (70% no BAE)	**C**	**C (>99%)**	**no - reusable**
TS_CH_6_1	HUS/C/IR/2024/CH97RE/3988	**HUS**	**HUS**	**C**	**W (90%)**	**no - reusable**

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_CH_7_1	GUE/C/DE/2024/DE-R01/9805	GUE	GUE	C	C (>99%)	yes
TS_CH_8_1	BAE/C/CH/2024/CH01EX/L62299331	BAE	GUExBAE	C	C (>99%)	yes
TS_CH_8_2	HUS/C/IR/2023/CH07RE/03719	HUS	HUS	C	W (>99%)	no - reusable
TS_CH_9_1	BAE/C/CH/0014/0531	BAE	GUE	C	C (>99%)	no - reusable
TS_CH_10_1	GUE/C/GR/2024/GR REMTH EX 00009/0000101	GUE	GUE	C	C (89%)	yes
TS_CH_10_2	not shown (restaurant)	*GUE**	DAU	*C**	C (>99%)	unknown
TS_CH_10_3	not shown (restaurant)	*GUE**	DAU	*C**	C (>99%)	unknown
TS_CH_10_4	not shown (restaurant)	*HUS**	HUS	*C**	C (>99%)	unknown
TS_CH_11_1	not shown (restaurant)	*HUS*/BAE**	BAE/GUE	C*	C (>99%)	unknown
TS_CH_12_1	not shown (restaurant)	*GUE**	DAU	no information	C (>99%)	unknown
TS_CH_13_1	GUE/C/BG/2024/CH08RE/24BG0093E	GUE	GUE	C	C (>99%)	no - reusable
TS_CH_14_1	not shown (restaurant)	*HUS**	GUExHUS	*C**	C (>99%)	unknown
TS_CH_14_2	not shown (restaurant)	*STE**	RUTxSTE	*C**	C (>99%)	unknown
TS_CH_14_3	not shown (restaurant)	*GUE**	GUE	*C**	C (>99%)	unknown

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_CH_15_1	GUE/C/CN/2024/FR94041320R/GC078	**GUE**	**GUE**	**C**	**C (>99%)**	**no - can be opened without evidence**
TS_CH_18_1	STE/C/CN/2024/P009/000081	**STE**	**STE**	**C**	**C (>99%)**	**no - reusable**
TS_CH_18_2	HUS/C/IR/2024/1053/G02P4824/2046410	**HUS**	**HUS**	**C**	**C (>99%)**	**no - reusable**
TS_CH_19_1	HUSxSTE/C/BG/2025/1613010/0002	**HUSxSTE**	**HUSxSTE**	**C**	**C (>99%)**	**yes**
TS_CH_20_1	**no CITES code**	***GUE****	**GUE**	***C****	**C (>99%)**	**no - missing**
TS_CH_21_1	**no CITES code**	***BAE****	**BAE/GUE**	***C****	**C (>99%)**	**no - missing**
TS_CH_21_2	**no CITES code**	***BAE****	**no result**	***C****	**C (>99%)**	**no - missing**
TS_CH_21_3	**no CITES code**	***BAE****	**BAE/GUE**	***C****	**C (>99%)**	**no - missing**
TS_CH_21_4	**no CITES code**	***BAE****	**BAE/GUE**	***C****	**C (>99%)**	**no - missing**
BULGARIA						
TS_BG_0_1	meat - not applicable	***GUE****	**GUE**	**no information**	**C (71%)**	**not applicable**
TS_BG_02_01	meat - not applicable	***HUS****	**HUS**	**no information**	**C (>99%)**	**not applicable**
TS_BG_02_02	meat - not applicable	***RUT****	**RUT**	**no information**	**W (>99%)**	**not applicable**
TS_BG_04_01	meat - not applicable	**no information**	**HUS**	***C****	**C (89%)**	**not applicable**
TS_BG_05_01	meat - not applicable	***RUT****	**RUT**	***W****	**W (>99%)**	**not applicable**

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_BG_10_1	meat - not applicable	***RUT****	**HUSxRUT**	***C****	**C (>99%)**	**not applicable**
TS_BG_11_1	meat - not applicable	**no information**	**GUE**	***C****	**C (87%)**	**not applicable**
TS_BG_13_1	meat - not applicable	**no information**	**GUE**	***C****	**C (>99%)**	**not applicable**
TS_BG_14_1	meat - not applicable	***HUS****	**BAE/GUExNAC**	***C****	**C (>99%)**	**not applicable**
TS_BG_14_2	SCHxDAU/C/CN/2024/DE-R15/SCXL24101701	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_BG_15_1	GUE/C/BG/2024/BG204110768/01	**GUE**	**GUE**	**C**	**C (>99%)**	**no - reusable**
TS_BG_16_1	GUE/C/BG/2024/BG1613014E0/2	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_BG_17_1	HUS/C/IT/ 2024 /FR94041320R	**HUS**	**HUS**	**C**	**C (>99%)**	**no - can be opened without evidence**
TS_BG_18_1	not shown (restaurant)	***RUT****	**GUE**	***C****	**C (>99%)**	**unknown**
TS_BG_19_1	meat - not applicable	**no information**	**HUS**	***C****	**C (95%)**	**not applicable**
TS_BG_19_2	SCHxDAU/C/CN/2024/DE-R15/SCXL24091201	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_BG_20_1	SCHxDAU/C/CN/2024/DE-R15/SCXL24102901	**SCHxDAU**	**SCHxDAU**	**C**	**C (>99%)**	**yes**
TS_BG_21_1	GUE/C/BG/2023/1313006/L04	**GUE**	**BAE/GUE**	**C**	**C (99%)**	**no - reusable**
TS_BG_22_1	**no CITES code**	***BAE****	**BAE**	***C****	**C (>99%)**	**no - missing**

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_BG_23_1	HUSxRUT/C/BG/2024/BG204110768/01	**HUSxRUT**	**HUSxRUT**	**C**	**C (>99%)**	**no - no seal/other evidence of opening**
TS_BG_23_2	GUE/C/BG/2024/BG204110768/01	**GUE**	**GUE**	**C**	**C (98%)**	**no - reusable**
TS_BG_23_3	**no CITES code**	**no information**	**BAE/GUE**	**no information**	**C (>99%)**	**no - missing**
TS_BG_23_4	BAE/C/BG/2024/BG204110768/5	**BAE**	**GUE**	**C**	**C (>99%)**	**no - reusable**
TS_BG_24_1	HUS/C/RO/2024/0002/0095	**HUS**	**HUS**	**C**	**C (76%)**	**yes**
TS_BG_25_1	meat - not applicable	**no information**	**BAE/GUExNAC**	***C****	**C (76%)**	**unknown**
ROMANIA						
TS_RO_1_1	HUS/C/RO/2023/0002/0079	**HUS**	**GUE**	**C**	**C (>99%)**	**yes**
TS_RO_2_1	meat - not applicable	***GUE****	**GUE**	***C****	**C (>99%)**	**not applicable**
TS_RO_3_1	meat - not applicable	**unspecified sturgeon**	**BAE/GUE**	***C****	**C (>99%)**	**not applicable**
TS_RO_3_2	meat - not applicable	**unspecified sturgeon**	**GUE**	***C****	**C (>99%)**	**not applicable**
TS_RO_4_1	meat - not applicable	***RUT****	**HUSxRUT**	***C****	**C (>99%)**	**not applicable**
TS_RO_5_1	meat - not applicable	***HUS****	**GUE**	***C****	**C (>99%)**	**not applicable**
TS_RO_6_1	meat - not applicable	***RUT****	**BAE/GUE**	***C****	**C (>99%)**	**not applicable**
TS_RO_6_2	meat - not applicable	***STE****	**GUE**	***C****	**C (>99%)**	**not applicable**

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_RO_7_1	meat - not applicable	unspecified sturgeon	TRA	*C**	C (>99%)	not applicable
TS_RO_7_2	meat - not applicable	*HUS**	TRA	*C**	C (>99%)	not applicable
TS_RO_10_1	meat - not applicable	*STE?**	BAE/GUE	*C**	C (>99%)	not applicable
TS_RO_10_2	meat - not applicable	*STE**	BAE/GUE	*C**	C (>99%)	not applicable
TS_RO_11_1	meat - not applicable	*GUE**	GUE	*C**	C (>99%)	not applicable
TS_RO_12_1	meat - not applicable	unspecified sturgeon	European catfish	*C**	C (>99%)	not applicable
TS_RO_13_1	GUE/C/RO/2023/0002/0081	GUE	RUT	C	C (>99%)	yes
TS_RO_14_1	RUTxHUS/C/RO/2024/0002/0108	RUTxHUS	GUE	C	C (>99%)	yes
TS_RO_15_1	NAC/C/ES/2024 ES-120000140-GR-UE	NAC	GUExNAC	C	C (>99%)	yes
TS_RO_16_1	BAE/C/GR/2024/GRRHB00001/1710/145012	BAE	BAE	C	C (>99%)	yes
TS_RO_17_1	SCHxDAU/C/CN/2024/DE-R06/E-05055/23	SCHxDAU	SCHxDAU	C	C (>99%)	yes
TS_RO_18_1	GUE/C/RO/2023/0002/0081	GUE	GUE	C	C (>99%)	yes
TS_RO_19_1	STE/C/RO/2024/0003/2008	STE	STE	C	C (>99%)	yes
TS_RO_23_1	SCH*DAU/C/CN/2024/DE-R15/SCXL24101701	SCHxDAU	SCHxDAU	C	C (>99%)	yes

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Sample	CITES code (for caviar)	Species/Hybrid		Source		CITES label fixed correctly
		declared	identified	declared	idendified	
TS_RO_24_1	STE/C/RO/2024/0011/T001	**STE**	**STE**	**C**	**C (>99%)**	**no - no seal/other evidence of opening**
TS_RO_26_1	GUE/C/RO/2023/0002/0083	**GUE**	**no result**	**C**	**C (>99%)**	**unclear**
TS_RO_27_1	GUE/C/RO/2024/0011/T002	**GUE**	**GUE**	**C**	**C (>99%)**	**yes**
TS_RO_28_1	GUE/C/RO/2023/0002/0083	**GUE**	**GUE**	**C**	**C (97%)**	**no - reusable**
TS_RO_29_1	not shown (restaurant)	**no information**	**artefact (traces of BAE/GUE)**	**no information**	**C (>99%)**	**unknown**
TS_RO_30_1	meat - not applicable	***GUE****	**GUE**	**no information**	**C (>99%)**	**not applicable**
TS_RO_31_1	GUE/C/CN/2024/PT-001/087082-24	**GUE**	**SCHxDAU**	**C**	**C (>99%)**	**no - reusable**
TS_RO_32_1	BAE/C/RO/2024/0008/336	**BAE**	**BAE**	**C**	**C (>99%)**	**unknown**

* based on information provided by salesperson/waiter/website/menu

° based on feed samples classified as consistent with aquaculture origin