



## The Endangered Species Import and Export Management Office of the People's Republic of China

ANNEX TWO-1 (6 Pages of English version for reference)

### Regional Strategies on conservation population of *Acipenser schrencki* and *Huso dauricus* and sustainable development in Heilongjiang (Amur) River

According to the conference held in 7<sup>th</sup> December, China and Russia collaborated countermeasures on the Hei long jiang *Huso dauricus* and *Acipenseridae* population protection and regional sustainable development.

Purpose and suggestion: a project is established to investigate the natural resources conditions, protect the Acipenseridae and prefer rationalized proliferation protection measures to achieve the sustainable development and use of natural resources. The relevant research time is listed to every suggestion.

#### 1 Development on the investigation of the Acipenseridae natural resources

1. Studies on the Acipenseridae population
2. Studies on the evaluation system of the Acipenseridae juvenile population and ecological environment (2~3 years)

#### Purpose:

3. To establish an standard evaluation of the existent Acipenseridae juvenile population;
- B. To develop the study and evaluation of the juvenile's life history.

#### Suggestion:

- A. To evaluate the living behavior of Acipenseridae juvenile, including water temperature, current of the Habitat and the distribution, food habitation, growth and development of the juvenile. (3 years)
- B. To evaluate the condition of every species complementary population by analyzing the constitution of the Acipenseridae juvenile population, including the constitution of age, body length and weight. (3 years)
- C. To investigate the ecological environment of the juvenile over wintering and nursery, including the river sections and area, water current, temperature, sediments and water level; to evaluate the growth condition of juvenile and strengthen the protection of juvenile's habitat; (3 years)
- D. To monitor the variation of the bait organism quality and quantity in the natural water body of juvenile; to strictly control the influence factors of habitat; (3 years)
- E. To consummate the detection and protection system of the juvenile growth and control illegal capture of the juvenile effectively. (3 years)

#### 1.1.2 Evaluation system of the adult and reproduction group. (3~10 years)

#### Purpose:



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- A. To comprehend the population status of the Heilongjiang River sturgeon;
- B. To investigate the habitat requirement of the adult and reproduction group;
- C. To evaluate the resources of Acipenseridae.

### Suggestion:

- A. To investigate the changes of Acipenseridae population structures, including the constitution of age, body length and body weight; (10 years)
- B. To make a countable traits statistic analysis and comparison to detect the conditions of population genetic variation; (5 years)
- C. To investigate the Acipenseridae distributing conditions and the feeding and migrating habits of the adult sturgeon; (3 years)
- D. To investigate the population structure, reproductive biology (including fecundity, reproductive cycle, gonad development ratio and mature reflectivity), and the distribution of spawning site, the ecological conditions and the influence of variety to the reproduction, including time, water temperature, water level, flow velocity, silt content and zymolite; (10 years)
- E. To statistics the production of catches and the quantitative variety of the fishing boats; (1 year)
- F. To control the migration of reproductive, fattening and over wintering site; (1~2 years)
- G. To comprehended the catches production, illegal capture and it's time and place to establish and practice the catches hierarchy. (1 year)

### 1.1.3 Studies on the ecological environment and other information varieties in the water area of Acipenseridae

#### Purpose:

- A. The environmental requirement of Acipenseridae in different life periods;
- B. to detect the heavy threaten factors to the habitat site and understand the protection condition of the habitat site;

#### Suggestion:

- A. To determine the requirement of different population to the habitat site; (5 years)
- B. To study the migration behavior of Acipenseridae; (5 years)
- C. To study the habitat site protection and actualization conditions. (5 years)

### 1.2 The monitoring of the genetic traits and variation

#### 1.2.1 Studies on the Acipenseridae genetic diversity (1~5 years)

#### Purpose:

- A. To understand the morphological structure of Heilongjiang Acipenseridae;
- B. To further consummate the fish introduction and production management, to protect genetic diversity of Heilongjiang River Acipenseridae.



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### Suggestion:

- A. To develop the study on the morphological structure of *Huso dauricus* and Heilongjiang River sturgeon; (3 years)
- B. The sturgeon population genetic diversity comparison between in the natural environment and artificial releasing water area; (5 years)
- C. To consummate the project of artificial releasing and prevent the invasion of hybrid strictly. (1~2 years)

### 1.2.2 The studies on the Acipenseridae karyotype

#### Purpose:

- A. To evaluate the Heilongjiang river Acipenseridae genetic variation;
- B. To protect the Heilongjiang river Acipenseridae genetic diversity;
- C. To strengthen the management and consummate the artificial enrichment procedure.

#### Suggestion:

- A. to determine the karyotype of *Huso dauricus* and Heilongjiang *Acipenser* living in different water area; (3 years)
- B. To determine the hybrid species karyotype in natural water area; (3 years)
- C. To establish the artificial releasing and enrichment procedures. (1 year)

### 1.3 The resource alternation, the ecological environment change of living water area and behavior interfere factors

#### Purpose:

- A. To analyze the changing cause of the natural Acipenseridae resources;
- B. To protect the natural resources;
- C. To strengthen environment protection;
- D. To control the catches.

#### Suggestion:

- A. To investigate the variety of hydrological factors in the Acipenseridae habitat water area; (2 years)
- B. To investigate the catches of Heilongjiang Acipenseridae; (1 year)
- C. To investigate the relationship between the Heilongjiang River volume of runoff and reproductive group; (5 years)

### 1.4 The establishment of unified Heilongjiang Acipenseridae research methods (1~3 years)

#### Suggestion:

- A. To consummate the research methods of Acipenseridae juvenile and reproductive group; (2 years)
- B. To protect the endemic sturgeon species in Heilongjiang River and prevent the un-allowed releasing,



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introduction and hybridization; (1 year)

- C. To develop the study on Acipenseridae resources renewal and fish production; (2~3 years)
- D. To practice wild domestication before fry releasing. (2 years)

### 2 The artificially protective measures

#### Purpose:

To strengthen the Acipenseridae protective law enforcement; to consummate the Acipenseridae protect and proliferate regional system; to establish reasonable capture limitation and protect the Acipenseridae natural resources; to develop sustainable use of the Heilongjiang Acipenseridae; to develop the study on the artificial breeding, set up the Acipenseridae germplasm resource bank and protect germplasm diversity.

#### 2.1 Regulations and politics

##### Purpose:

To strengthen the Acipenseridae protection; to consummate the measures to protect and proliferate Sturgeon fish

##### Suggestion:

- A. To understand existent national protective policy; (1 year)
- B. To participate the exploitation of trade certificated DNA system of the Acipenseridae; (3 years)
- C. To adjust the protective measures to fit the Acipenseridae biology; (1 year)
- D. To limit or forbid the capture of wild stock in forbidding fishing area during the closed fishing seasons; (1 year)
- E. To determine the enforcement of the law and politics to ensure the effective performance of the protective measures. (1 year)

#### 2.2 Fishing intensity

##### Purpose:

- B. To protect and sustainable utilize the Heilongjiang Acipenseridae effectively;
- C. To utilize the natural resources reasonably.

##### Suggestion:

- A. to control the illegal capture and trade strictly and take effective measures to ensure the comply of the law; (1 year)
- B. to understand fishing intensity in the recent 20 years, including ships and nets; (1 year)
- C. to evaluate the influence of fishing intensity variety to resources in the resent 20 years; (3 years)



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### 2.3 Artificial cultures and releasing

Purpose:

1. To protect and sustainable utilize of the Heilongjiang Acipenseridae effectively;
2. To utilize the natural resources reasonably.

Suggestion:

- A. To understand the artificial breeding conditions in different regions, including area, production and juvenile origin;
- B. To develop the study on culture and re-use of prepared parent fishes;
- C. To detect the quantities and stand of the artificial releasing fish to ensure its effective performance; (3 years)
- D. To forbid the fish species with dangerous genes enter into the natural water body; (1~2 years)
- E. To consummate the operating regulations of artificial releasing.

### 2.4 The construction of original site

Purpose:

To prevent endemic species germplasm from polluting; to recover the natural resources.

Suggestion:

- A. To construct original site; (3 years)
- B. To detect management of original site; (1 year)
- C. To consummate the original fish production and detection system of original site. (1 year)

### 3 The construction of Acipenseridae natural resources detection system

Purpose: to construct detection system of Acipenseridae juvenile, reproductive group alteration and environment; to master the relationship between altered regulation and environment; to provide scientific proof for protecting and improving the Acipenseridae survival environment.

#### 3.1 The detection of juvenile

Purpose:

To make the juveniles grow normally.

Suggestion:

- A. To detect the natural reproductive juveniles; (3 years)
- B. To tracking detect the growth and development of the artificial releasing juvenils; (3 years)



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3.2 The monitoring of the spawning site, cultural site and over winter site (3 years)

Purpose:

To comprehend the influence of perch site to the fish resources

3. To monitor the water area variation of the perch site, including the spawning site, cultural site and over winter site (3 years);
4. To control the noxious substance introduction to the Acipenseridae perch site.

4 The adaptability management under the leading of CITES

Purpose:

To strengthen the construction of national jurisprudence; to develop the evaluation on Acipenseridae natural resources; to ensure the performance of the treaty made in the 7<sup>th</sup> December conference.

5. The performance of the treaty made in the 7<sup>th</sup> December Conference (1 year)
6. to achieve a consistent attitude on the sturgeon export quota according to regional detection system.

Suggestion: (2 years)

- A. To strengthen the construction of national jurisprudence and ensure the performance of the treaty made in the 7<sup>th</sup> December conference; (2 years)
- B. To organize national conference and international academic communication on the Acipenseridae termly; (2 years)
- C. To develop the natural resources evaluation on the Acipenseridae termly, including the evaluation on population and population fluctuation factors, such as, capture, pollution, vegetative cover, bait, enemy biology, the change of the spawning sites, cultural sites and over winter sites; (2 years)
- D. To establish capture limitation and export quota of every species and form a consistent attitude to report to the secretary, according to regional detection system. (1 year)

5 The national protective strategies

Purpose:

To develop and utilize the national management plan reasonably.

Suggestion:

- A. To consummate the management law and policy; (1 year)
- B. To establish the catches records; (1 year)
- C. To establish the project on the research and foundation guarantee policy; (1 year)
- D. To detect the effect of artificial releasing (germplasm detection); (2 years)



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- E. To construct the original site; (3 years)
- F. To establish the national strategy protective project to recover natural resources; (1 year)
- G. To hold two-side professional communication termly; (1 year)
- H. To perform the regional strategy and foundation guarantee related to national management plan. (1 year)