

**RESEARCH AND  
TECHNOLOGICAL  
DEVELOPMENT CONDITIONS  
OF STURGEON CULTURE IN  
CENTRAL AND EASTERN  
EUROPE**

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## 1. INSTITUTIONS OF NACEE – Sturgeon Culture group

- The Stanislaw Sakowicz Inland Fisheries Institute (Poland);
- Institute of Genetics and Cytology of the National Academy of Sciences of Belarus (Belarus);
- Institute for Fisheries of the Ukrainian Academy of Agricultural Sciences (Ukraine);
- Institute of Fisheries and Aquaculture (Bulgaria);
- All-Russian Research Institute of Freshwater Fish Farming “VNIIPRKh” (Russia);
- All-Russian Research Institute of Fisheries and Oceanography “VNIRO” (Russia);
- “BIOS” Research-and-Production Center for sturgeon-breeding (Russia)
- Research Institute for Fisheries, Aquaculture and Irrigation “HAKI” (Hungary);
- State Research-and-Production Center of Fisheries “Gosrybtsentr” (Russia)



## 2.1. Formation of reproductive brood stocks of Sturgeons and Paddlefish



- Formation of Paddlefish juvenile and spawning brood stock (Ukraine);
- Development of methods of accelerated brood stock formation from rare and endangered sturgeon species (Russia);
- Piscicultural-biological monitoring of brood stocks from rare and endangered sturgeon species in industrial fish-farming conditions (Russia);
- Development of biological fundamentals of use of an innovation brood stock for Russian aquaculture – Sakhalin sturgeon (*Acipenser medirostris mikadoi*) (Russia);





## 2.2. Artificial reproduction of sturgeons



- Development of complex measures to replenish Sterlet populations in Ukrainian rivers (Ukraine);
- Development of biological justification for Paddlefish introduction into inland waters of Ukraine (Ukraine);
- Development of biological justification to replenish Sterlet populations the transboundary Dnieper area (Belarus and Ukraine);
- Paddlefish introduction into Bulgarian inland waters (Bulgaria);
- Study of possibilities for active preservation of Common sturgeon (*Acipenser sturio*) in preparation for the restitution of this species in Poland (Poland);
- Optimization of biotechnology of Ob-Irtysh sturgeon artificial reproduction (Russia);
- Development of new technologies and guidelines aimed to increase water bioresources, to form brood stocks of rare and endangered fish and to improve the efficiency of fish-farms of "Gosrybtsentr" (Russia).

## 2.3. Commodity sturgeon rearing



-Development of efficient processes for commodity sturgeon-breeding at Ukrainian fish-farms (Ukraine);

-Development of efficient processes for Paddlefish seeding and commodity production at Ukrainian pond farms (Ukraine);

-Improvement of sturgeon rearing methods (Poland);

- Development and implementation of advanced biotechnology of sturgeon brood stock formation with application of geothermal waters in the Western Siberian conditions (Russia).

## 2.4. Genetic and biological R&D activities in sturgeon-breeding



- Gene pool collection (Hungary);
- Study of DNA polymorphism of Sakhalin sturgeon brood stock for molecular-genetic certification of breeders (Russia);
- Study of protection mechanisms of antimutagene in Sterlet (*Acipenser ruthenus*) (Belarus).



# 3. Fields of cooperation





Institution	Cooperation		
	Joint R&D	Exchange of scientists	Exchange of material
HAKI (Hungary)	Russia		
VNIIPRKh (Russia)	Hungary, China, Vietnam	USA, France, Russia	China
Stanislaw Sakowicz Institute (Poland)	Russia, Ukraine	Ukraine	Russia
VNIRO (Russia)	Czech Republic, Spain	Czech Republic	
Institute of Fisheries and Aquaculture (Bulgaria)	Bulgaria	Russia	
Institute of Genetics and Cytology (Belarus)	Russia, Belarus	Czech Republic, Hungary, China, Russia	
Institute for Fisheries (Ukraine)	Poland, Ukraine, Hungary		Poland
"Gosrybtsentr" (Russia)	Russia	Russia	Russia, Poland
"BIOS" Center (Russia)	Russia, Germany, Kazakhstan	Greece, Bulgaria, Germany, Iran, China	China, Germany, Bulgaria, Slovakia, Latvia, Kazakhstan, USA, Ukraine, Belarus, Poland

## 4. Personnel in sturgeon-breeding



Institution	Number of researchers or experienced staff	Higher professional education	Candidates or Doctors	Average age	Average experience (years)
HAKI (Hungary)	4	3	3	52	13.5
VNIIPRKh (Russia)	12	12	9	55	—
Stanislaw Sakowicz Institute (Poland)	9	6	2	~ 38	8.5
VNIRO (Russia)	17	17	12	45	15.6
Institute of Fisheries and Aquaculture (Bulgaria)	3	3	3	44	—
Institute of Genetics and Cytology (Belarus)	1	1	1	50	10
Institute for Fisheries (Ukraine)	7	7	4	~ 48	~ 10
“Gosrybtsentr” (Russia)	6	6	2	~ 45	~ 7
“BIOS” Center (Russia)	69	28	6	35	12



## Trends in sturgeon-breeding research for the nearest future:

1. Determination of guidelines for physiological and immune status, vitality, optimum size-and-weight characteristics of sturgeon and Paddlefish juveniles used as seeding for commodity farms and for stocking of natural water bodies;
2. Scientific support for the formation of collection stocks of sturgeons and Paddlefish, creation of frozen banks of reproduction products;
3. Development of an express-method for earlier sex-determination in sturgeons;
4. Development of methods of accelerated maturation of sturgeons in aquaculture for earlier production of caviar;
5. Reintroduction of extinct sturgeon species into their natural habitat;
6. Anesthetics in sturgeon-breeding;
7. Biology of rare and endangered sturgeon species in the natural habitat;
8. Definition of morphologic-biologic and physiologic-biochemical characteristics of pedigree material of sturgeons and Paddlefish;
9. Development of regulations for the formation of domesticated juvenile and spawning brood stocks;
10. Improvement of sturgeon mixed-feed formulas with application of biologically-active agents, premixes and immune protectors;
11. Study of sturgeon diseases in aquaculture and the development of preventive-treatment.

## **Suggestions for joint activities:**

1. Advanced training of the personnel at the facilities of the leading sturgeon culture enterprises and research institutions;
2. Exchange of genetic material of sturgeons and Paddlefish;
3. Building of a catalogue of sturgeon species and hybrids in aquaculture;
4. Development of an Internet-available bank of sturgeon-specific literature;
5. Regular holding of international scientific-and-practical conferences.



Thank You