World Organisation for Animal Health

Launch of the Regional AquaticAnimal Health Laboratory Network for Africa (RAAHLN-AF)

5 – 7 December 2023 Pretoria, South Africa

ARC • LNR

UNION AFRICAINE
BUREAU INTERAFRICAIN DES RESSOURCES ANIMALES

FishGov 2 Project

World Organisation for Animal Health

WOAH Collaborating Centre for Emerging Aquatic Animal diseases

Reference Centre

World Organisation for Animal Health
Founded as OIE

Ed Peeler

Richard Paley

Kelly Bateman

Centre for Environment Fisheries & Aquaculture Science

Cefas

OUR VISION

A sustainable future for rivers, seas and the ocean

OUR MISSION

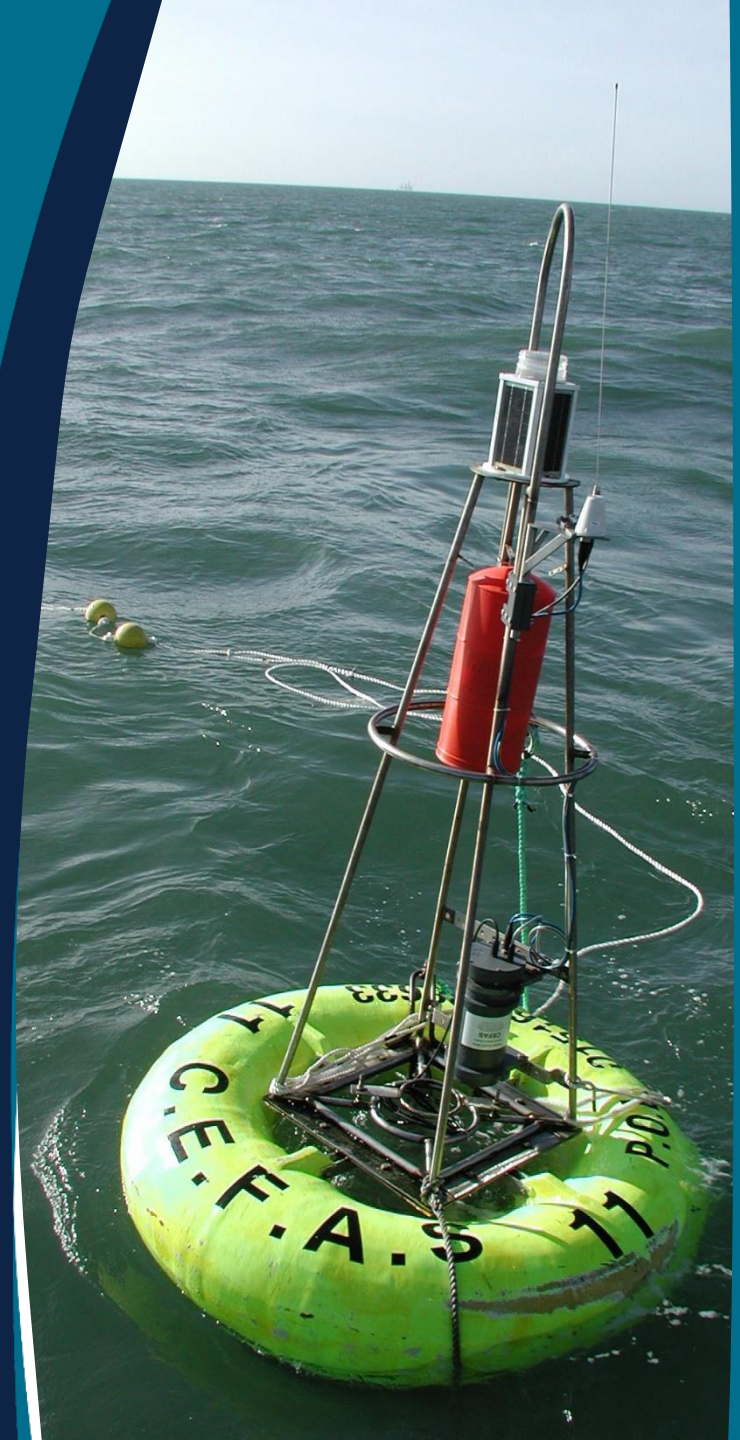
To apply our unique scientific expertise to achieve healthy and productive marine and freshwater ecosystems

We are Cefas

Cefas is the **C**entre for **E**nvironment, **F**isheries, and **A**quaculture **S**cience.

We are an Executive Agency of Defra, the UK government's Department of Environment, Food and Rural Affairs.

We employ specialists across the aquatic sciences: from aquatic animal health to aquaculture, blue carbon to biological effects monitoring, fisheries to future energy.



Our Science

FOOD FROM WATER

Science, tools and advice to secure a **sustainable future** for fisheries and aquaculture.

ECOSYSTEM CHANGE

Understanding how aquatic ecosystems work and why they change so that we can **sustainably manage and restore** degraded marine and freshwater environments.

ENVIRONMENT AND PEOPLE

Supporting **sustainable marine economies**, by understanding the interactions between people and their environment, and identifying actions to drive positive outcomes.

ANIMAL AND HUMAN HEALTH

Protecting people and animals from biological and chemical hazards in water and seafood.

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Collaborating centre: terms of reference

- provide **services to WOAH**
- propose or develop methods and procedures that **facilitate harmonisation of international standards and guidelines**
- **carry out and/or coordinate scientific and technical studies**
- collect, process, analyse, publish and disseminate **data and information**
- provide scientific and technical **training**
- organise and participate in **scientific meetings**
- identify and **maintain existing expertise**
- establish and maintain a **network with other WOAH Collaborating Centres**
- place expert consultants at the disposal of WOAH.

WOAH mission

- The WOAH seeks to minimise the disease risks associated with international trade in animals and their products by promoting ‘transparency’ and ‘sanitary safety’
- ‘Transparency’ in the global animal health situation is achieved through reporting by Member Countries of listed and **emerging animal diseases**

WOAH standards relevant to collaborating centre for **emerging diseases**

- *Competent Authorities* shall, under the responsibility of the Delegate, send to the *Headquarters*:

1. a ***notification*** through WAHIS or by fax or email, when an *emerging disease* event has occurred in a country, a *zone* or a *compartment*

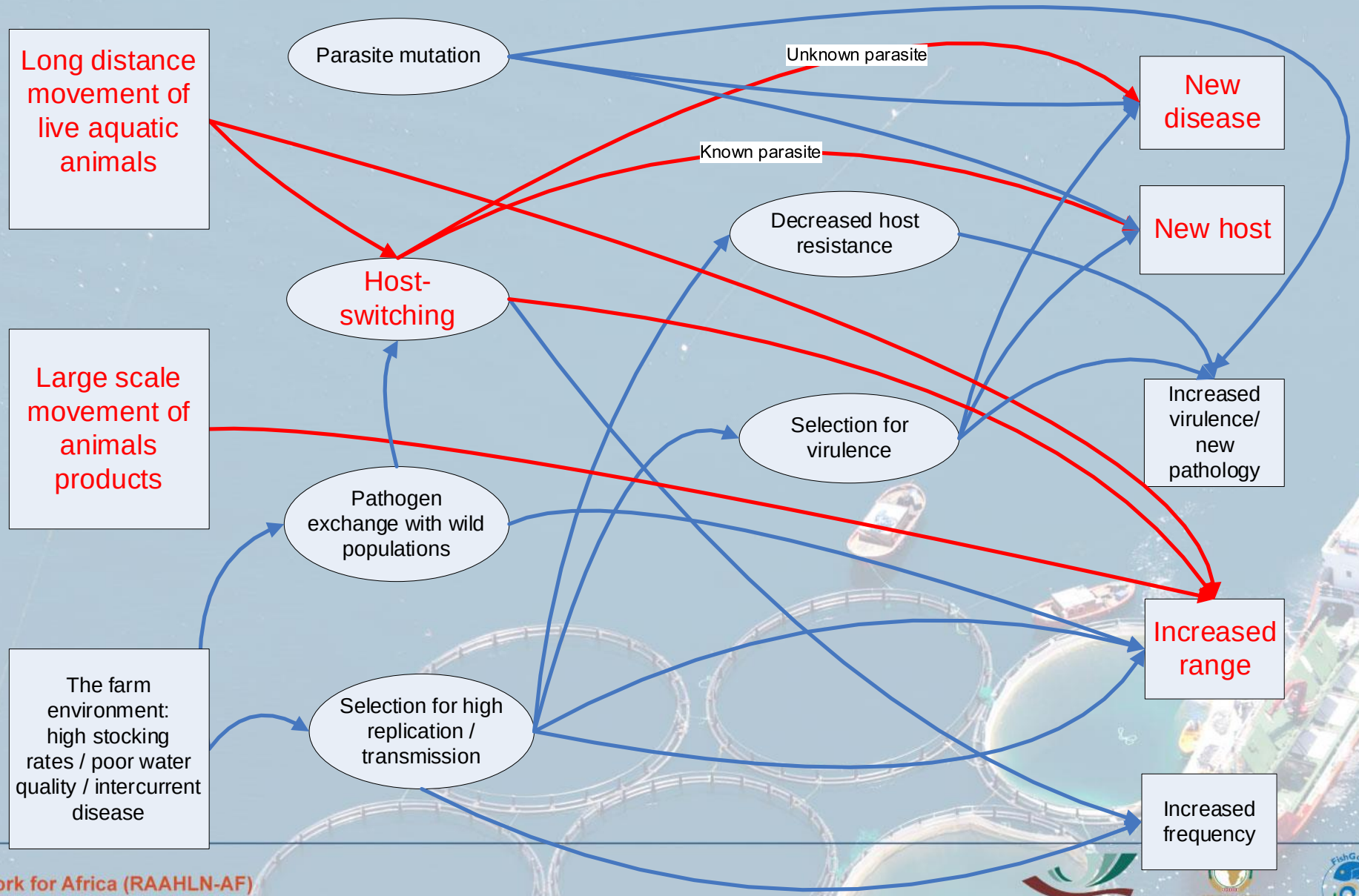
Categories of emerging disease

New pathogen

Existing pathogen

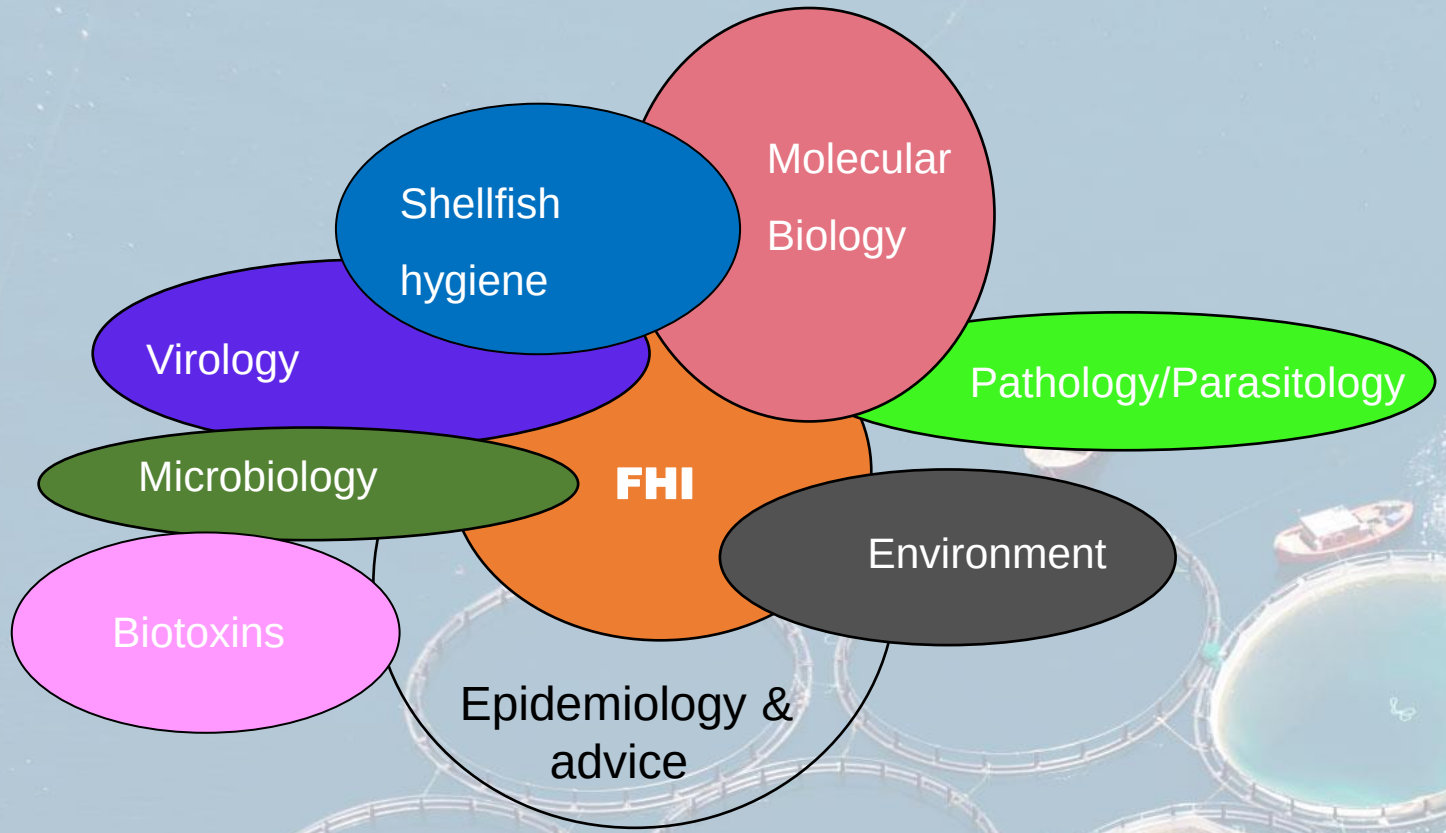
- New host
- New region
- Increased pathogenicity
- Increased prevalence

significant impact on **aquatic animal health**


Long distance movement of live aquatic animals
Large scale movement of animals products
The farm environment: high stocking rates / poor water quality / intercurrent disease
Parasite mutation
Host-switching
Pathogen exchange with wild populations
Selection for high replication / transmission
Unknown parasite
Known parasite
Decreased host resistance
Selection for virulence
New disease
New host
Increased virulence/ new pathology
Increased range
Increased frequency

Weymouth laboratory: AAH and food safety

Maintaining the health of wild & farmed seafood to minimise economic loss & maximise food production/security



World Organisation for Animal Health

"Cefas' work in collaboration with national and international partners supports delivering global priorities."

Delivering Global Priorities

Key Functions

- Disease investigation and diagnosis
- Collection, analysis and dissemination of information
- Advice & Training
- Capacity building support

World Organisation for Animal Health

Aims

- Efficient and accurate detection of **emergent and potentially emergent aquatic animal diseases**
- Rapid detection, characterization and reporting of the causative agents of [emerging] disease.
- Knowledge sharing and training.
- Function as a global resource for health and disease research, diagnostics, pathogen detection and description.

CANADA
Dr Simon Jones
Fisheries and Oceans
Nanaimo, Canada

DENMARK +
Prof Niels Olesen
European Union Reference
Laboratory for Fish and
Crustacean Diseases
Copenhagen, Denmark

FRANCE +
Dr Isabel Arzul
European Union Reference
Laboratory for Mollusc
Diseases
La Tremblade, France

USA
Dr Gael Kurath
U.S. Geological Survey –
Western Fisheries
Research Centre
Seattle, USA

CHILE
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Andres Bello
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Department of Agriculture,
Forestry and Fisheries
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Indian Council of Agriculture
Research – National Bureau of
Fish Genetic Resources
Utter Pradesh, India

CHINA
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The Key Laboratory of
Aquatic Animal Disease
Shenzhen, P.R. China

THAILAND + (ASEAN_AAHN)
Dr Puttharat Baoprasertkul
Department of Fisheries
Bangkok, Thailand

A developing AAH network

How we work

- Direct collaboration on description of novel and emerging disease agents in aquatic animals
- Advice and protocols for:
  - sample collection, submission and shipping
  - importation permits and fulfilment of Nagoya Protocols arrangements
  - reporting findings arising with national Responsible Authorities and WOAH

- For fish – Dr Richard Paley: richard.paley@cefas.gov.uk
- For crustaceans – Dr Kelly Bateman: kelly.bateman@cefas.gov.uk
- For molluscs – Dr Fred Batista: frederico.batista@cefas.gov.uk

Rules of engagement

- **Country approach led –** e.g. request for assistance with disease investigation or capacity building

- **Collaboration:** work with local associate laboratories, inc. EURLs and other WOAH collaborating centres and reference laboratories
- Ensure national **Competent Authorities** aware and engaged

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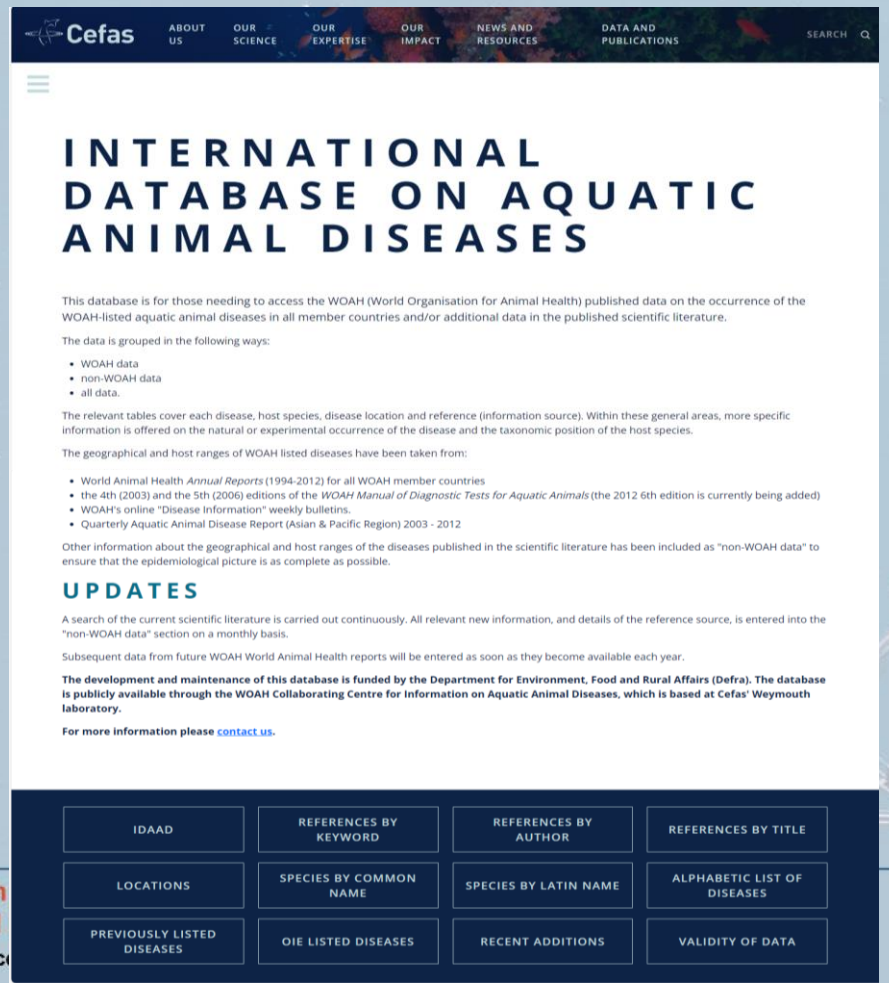
Collect, process, analyse, publish and disseminate **data and information**



Registry of aquatic pathology

Launch
Animal
5 – 7 Dec

World Organisation for Animal Health

International Database on Aquatic Animal Diseases

- Brings together WOAH and non-WOAH data via continuous monitoring of over 30 information sources, including grey literature and peer reviewed papers

IDAAD	REFERENCES BY KEYWORD	REFERENCES BY AUTHOR	REFERENCES BY TITLE
LOCATIONS	SPECIES BY COMMON NAME	SPECIES BY LATIN NAME	ALPHABETIC LIST OF DISEASES
PREVIOUSLY LISTED DISEASES	OIE LISTED DISEASES	RECENT ADDITIONS	VALIDITY OF DATA

Registry of Aquatic Pathology

Collection of **aquatic animal diseases.**

Includes **bacterial, parasitic** and **viral** disease.

Aquarium, cultured and wild fish and shellfish from **freshwater** and **marine** environments.

Materials include **microscope slides, gross pathology images** and **parasites.**

RAP is **online** on Cefas website https://www.cefas.co.uk/data-and-publications/registry-of-aquatic-pathology/

Now including digital imaging

Challenges

Collaborating centre

- High level agreement for notification of results to WOAH
- Funding
- Export of samples

National reference laboratories

- Shortage skilled AAH professionals
- Lack of reagents
- Transport of samples in country (unreliable cold chain)
- Lack of maintenance contracts for equipment
- Obtaining positive control material

World Organisation for Animal Health

Received: 1 May 2020 | Revised: 29 July 2020 | Accepted: 3 September 2020

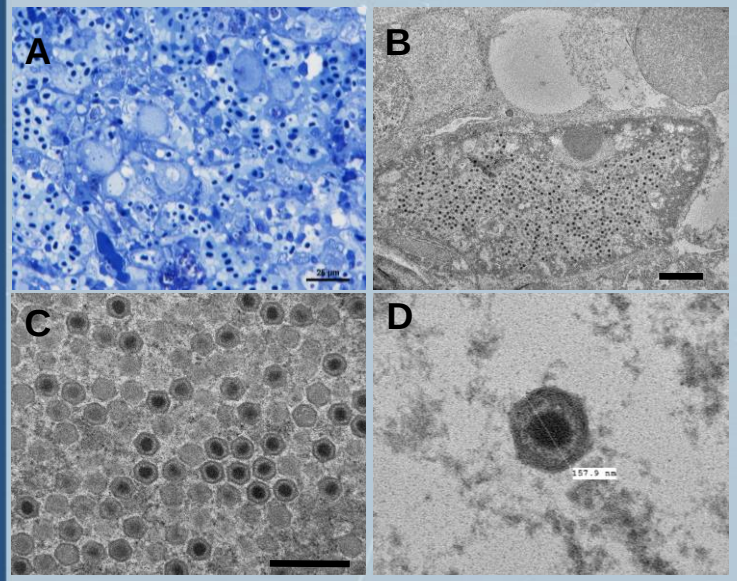
DOI: 10.1111/tbed.13825

ORIGINAL ARTICLE

Transboundary and Emerging Diseases WILEY

First detection of infectious spleen and kidney necrosis virus (ISKNV) associated with massive mortalities in farmed tilapia in Africa

José Gustavo Ramírez-Paredes[1] | Richard K. Paley[2,3] | William Hunt[1] | Stephen W. Feist[2,3] | David M. Stone[2,3] | Terence R. Field[1] | David J. Haydon[1] | Peter A. Ziddah[4] | Mary Nkansa[4] | James Guilder[2,3] | Joshua Gray[2] | Samuel Duodu[5] | Emanuel K. Pecku[6] | Joseph A. Awuni[6] | Timothy S. Wallis[1] | David W. Verner-Jeffreys[2,3]

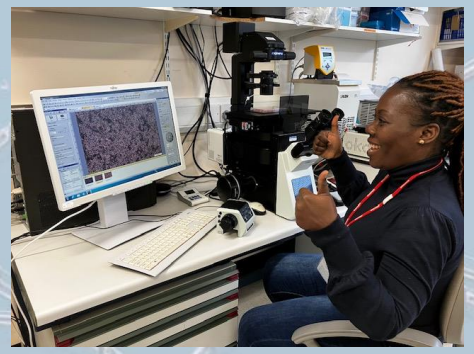


Recent examples of collaboration: ISKNV in Ghana

FISHERIES COMMISSION

Training and support in country - sampling and diagnostic techniques

Supporting PhDs - Epidemiology of ISKNV in lake Volta
- Novel detection methods

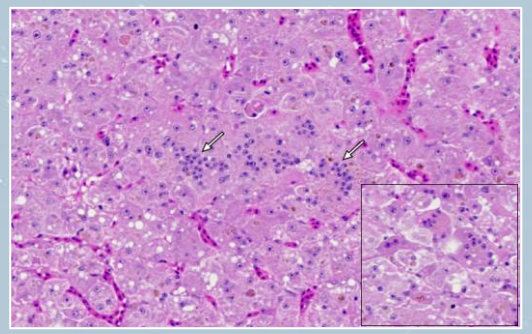


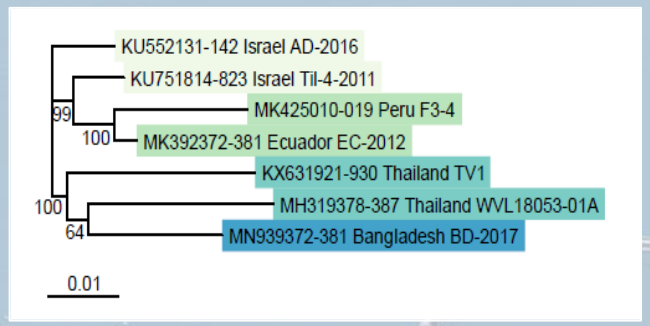
Variant TILV in Bangladesh

Article

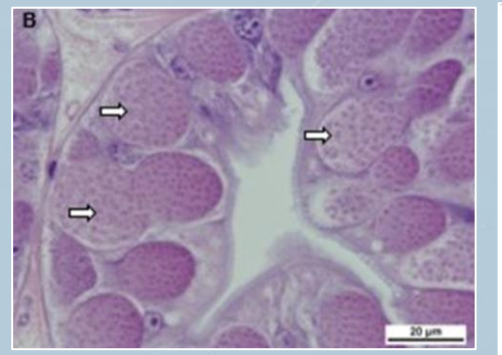
The Segment Matters: Probable Reassortment of Tilapia Lake Virus (TiLV) Complicates Phylogenetic Analysis and Inference of Geographical Origin of New Isolate from Bangladesh

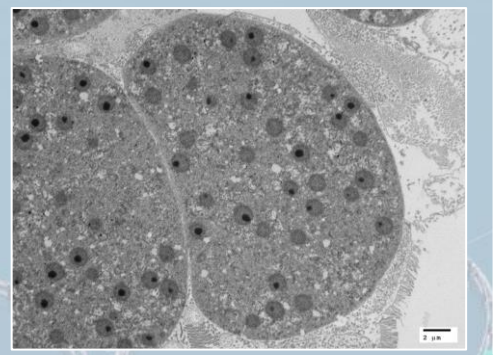
Dominique L. Chaput [1,*], David Bass [2,3], Md. Mehedi Alam [4], Neaz Al Hasan [4], Grant D. Stentiford [2,3], Ronny van Aerle [2,3], Karen Moore [5], John P. Bignell [3], Mohammad Mahfujul Haque [4,†] and Charles R. Tyler [1,2,*,†]

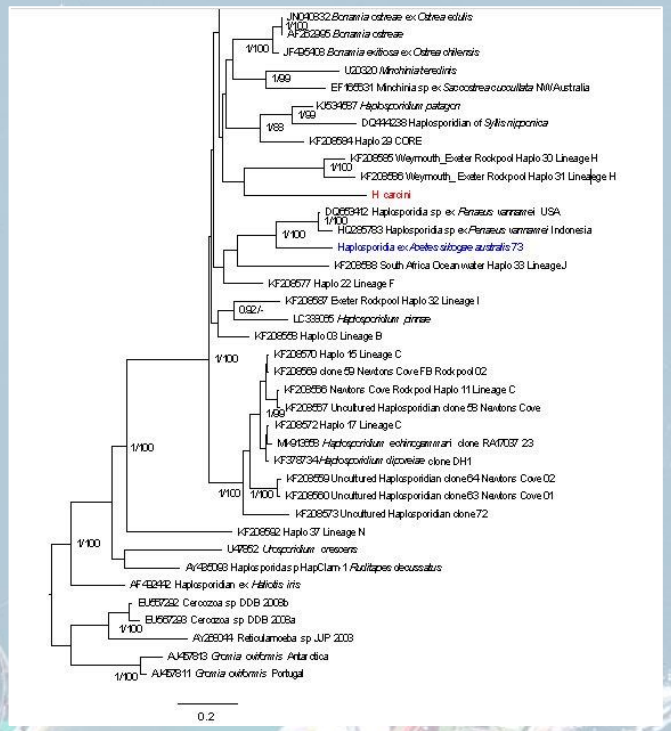




Haplosporidian in Australian shrimp





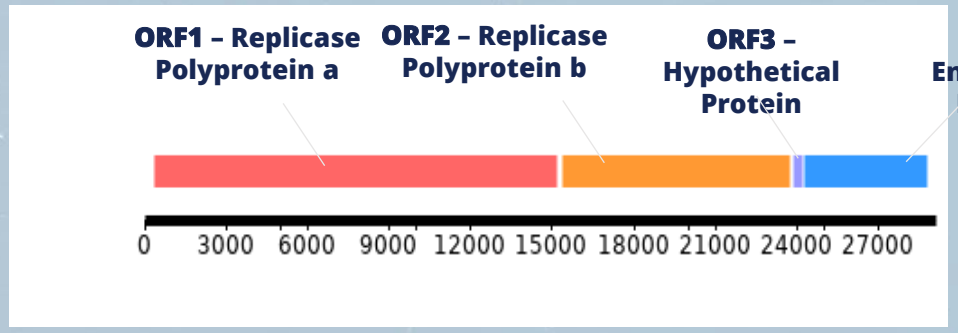


MrGV in freshwater shrimp

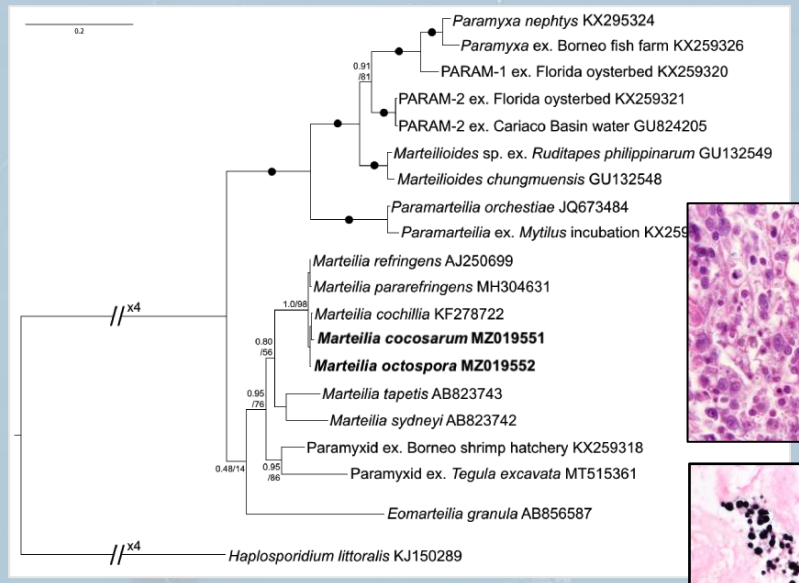
Article

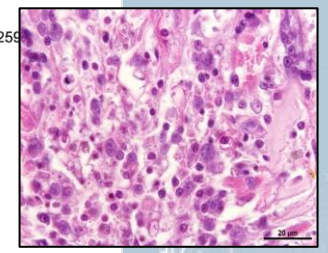
A Novel RNA Virus, *Macrobrachium rosenbergii* Golda Virus (MrGV), Linked to Mass Mortalities of the Larval Giant Freshwater Prawn in Bangladesh

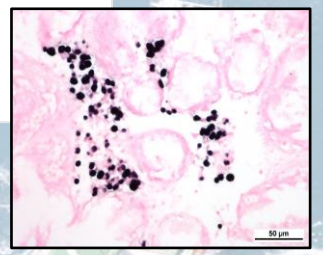
Chantelle Hooper [1,*], Partho P. Debnath [2,*], Sukumar Biswas [3], Ronny van Aerle [1,4], Kelly S. Bateman [1,4], Siddhawartha K. Basak [2], Muhammad M. Rahman [2], Chadag V. Mohan [5], H. M. Rakibul Islam [6], Stuart Ross [1], Grant D. Stentiford [1,4], David Currie [3] and David Bass [1,4,7]



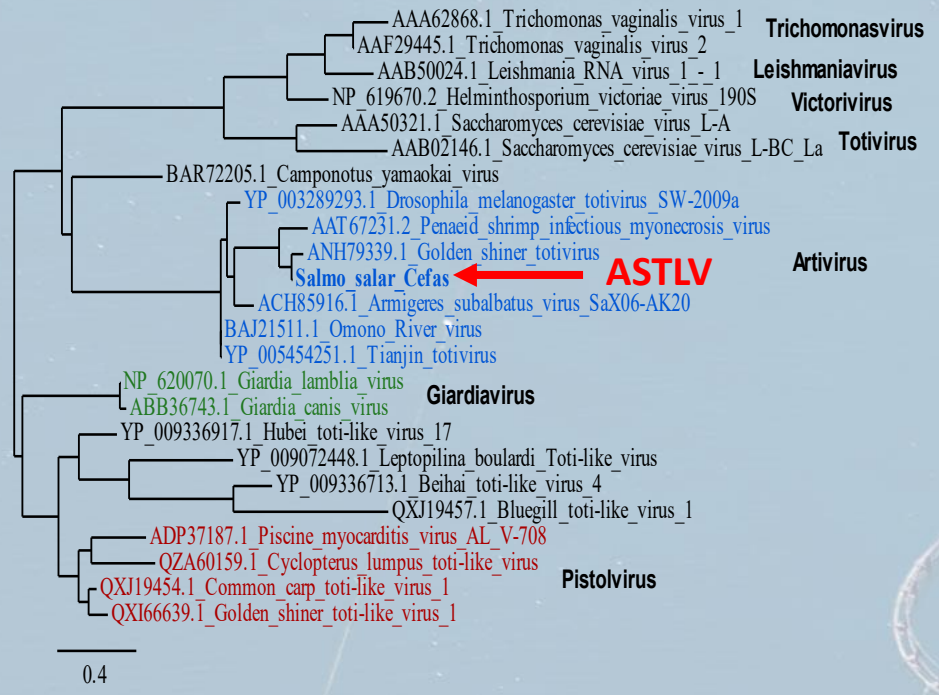
Marteilia in Welsh cockles

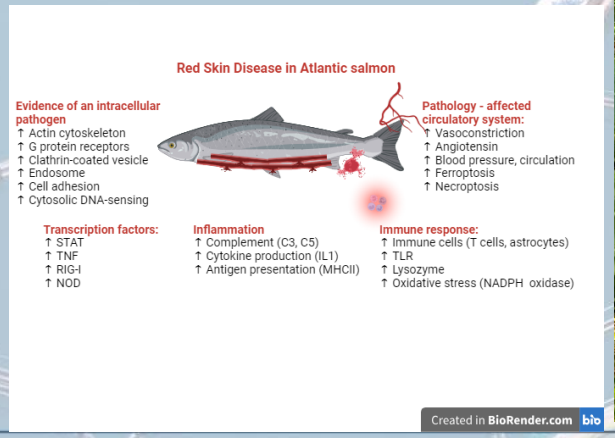






Red Skin Disease in wild returning Atlantic salmon - novel toti-like virus





Thank you for listening

ed.peeler@cefas.gov.uk

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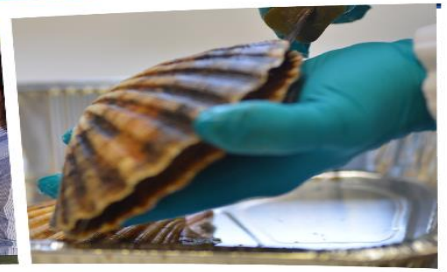



Centre for Environment Fisheries & Aquaculture Science

Cefas

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INTERAFRICAN BUREAU FOR ANIMAL RESOURCES

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- Richard Paley richard.paley@cefas.gov.uk
- Kelly Bateman kelly.bateman@cefas.gov.uk

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https://www.cefas.co.uk/icoe/aquatic-animal-health/designations/woah-collaborating-centre-for-emerging-aquatic-animal-disease/