



# Les espèces exotiques envahissantes

## Réglementation européenne et enjeux pour le Luxembourg

Luxembourg, 20 mars 2018  
**Musée national d'histoire naturelle**



LE GOUVERNEMENT  
DU GRAND-DUCHÉ DE LUXEMBOURG  
Ministère du Développement durable  
et des Infrastructures

Département de l'environnement



# Invasive alien aquatic **neozoa** targeted by EU regulations

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Ministère du Développement durable  
et des Infrastructures

Administration de la gestion de l'eau



*Eriocheir sinensis* H.Milne Edwards, 1854

EN: Chinese mitten crab

DE: Chinesische Wollhandkrabbe

FR: Crabe chinois à mitaines

LU: Chinesesch Wollhandkrabb





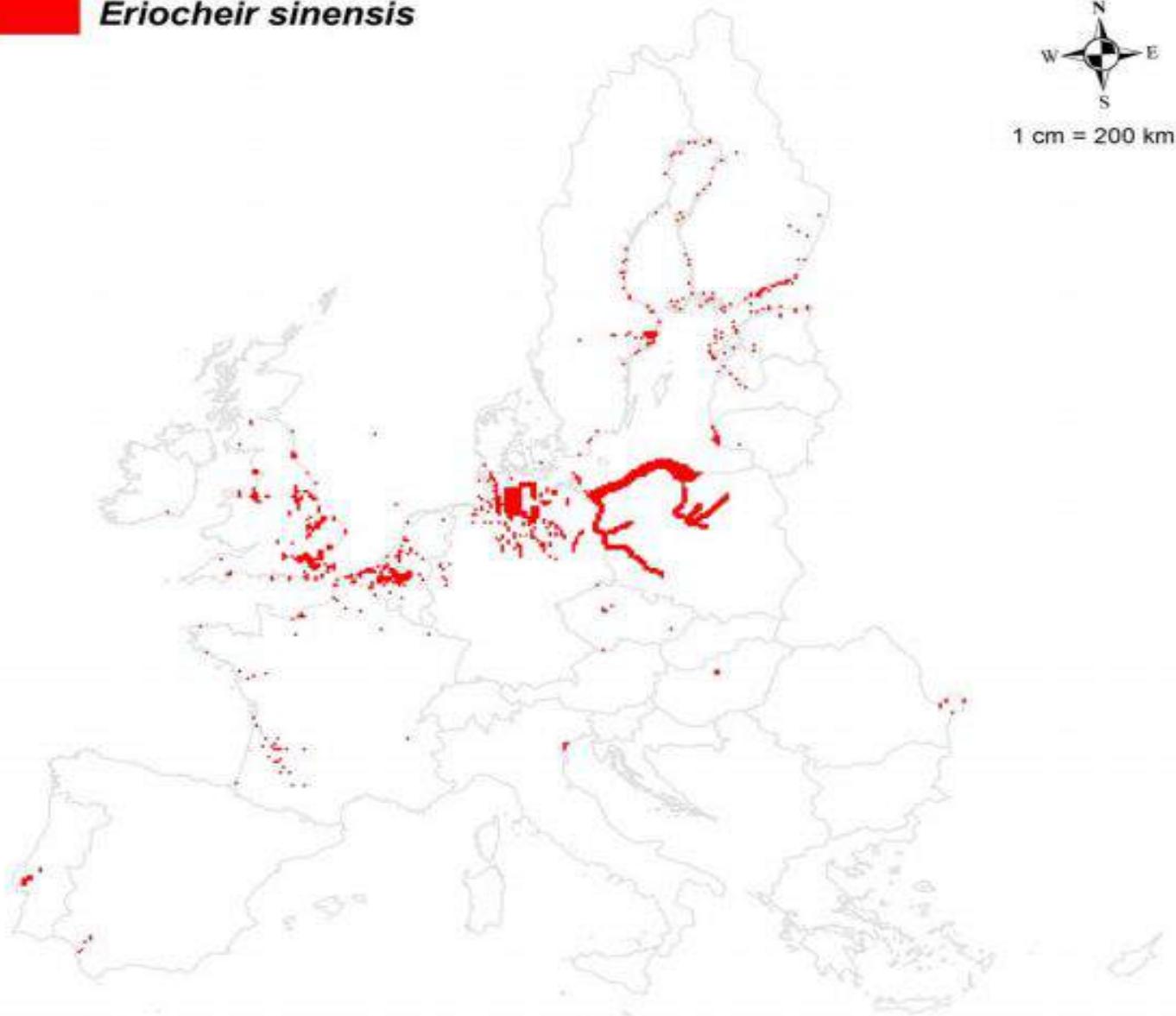
- Origin: Eastern Asia (Korea, China)
- Habitat: Aquatic (rivers, estuaries, coastal areas)
- Lifecycle: catadromous (migration from fresh water to spawn in the sea)
- Pathway: ballast water of shipping
- Occurrence in LU: ?
- Status LU: ISEIA CO

# Crayfishes - *Eriocheir sinensis*



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## *Eriocheir sinensis*



1 cm = 200 km





## *Orconectes limosus* Rafinesque, 1817

EN: Spiny-cheek crayfish

FR: Ecrevisse américaine

DE: Kamberkrebs

LU: Kamberkriebs



- Small to medium sized (length adults 12 cm)
- claws with orange tips
- striped abdomen
- black coloration due to sediments

# Crayfishes - *Orconectes limosus*

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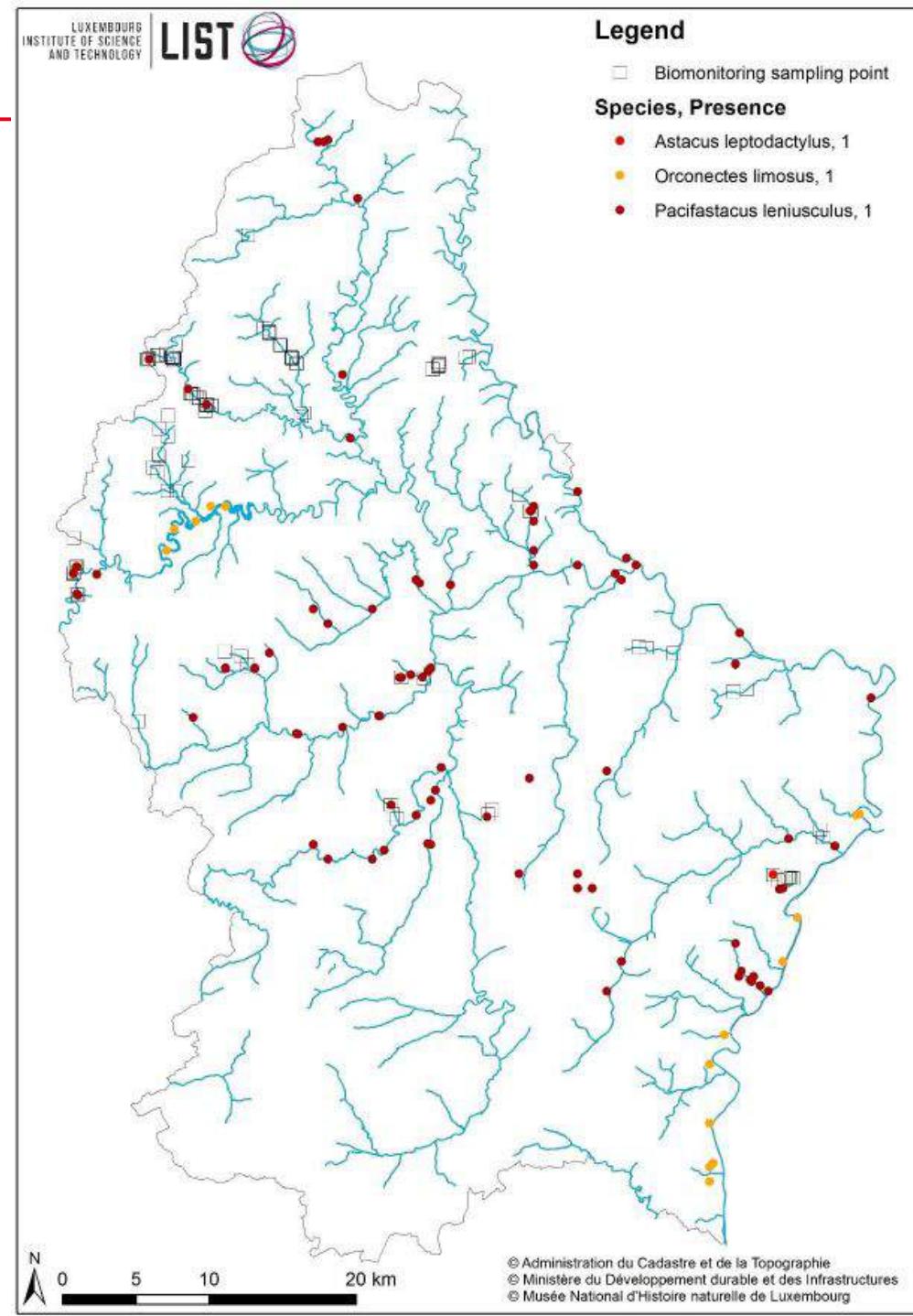
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- Origin: Northern America (east coast)
- Habitat: Aquatic (silty lowland streams, still waters)
- Lifespan: 2-4 years
- Pathway: Deliberate introduction (restocking measures)
- Introduction Europe/LU: 1890s/1950s
- Status LU: ISEIA C2

# Crayfishes - *Orconectes limosus*

## Occurrence in LU:

- Moselle and tributaries
- Lac Esch/Sûre





*Orconectes virilis* Hagen, 1870

EN: Virile (Northern) crayfish

DE: Viril-Flusskrebs

FR: Ecrevisse à pinces bleues



- ca. 20 cm
- Olive brown body
- Abdominal segments with dark brown spots
- Blueish legs



- Origin: Northern America and Southeast Canada
- Habitat: Aquatic (silty lowland streams, rivers, streams, lakes and ponds)
- Lifespan: 3 years
- Pathway: Deliberate introduction (restocking measures)
- Occurrence in Luxembourg: ?
- Status LU: not evaluated

# Crayfishes - *Orconectes virilis*



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## ***Orconectes virilis***



Coordinate System: ETRS 1989 LAEA



*Pacifastacus leniusculus* Dana, 1852

EN: Signal crayfish

FR: Ecrevisse signal

DE: Signalkrebs

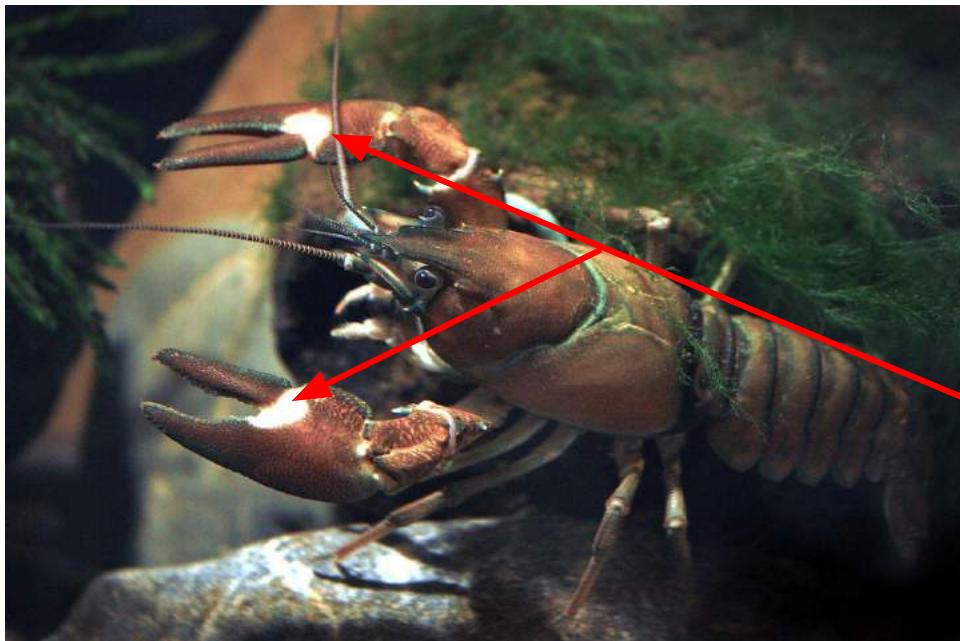
LU: Signalkriebs



# Crayfishes - *Pacifastacus leniusculus*

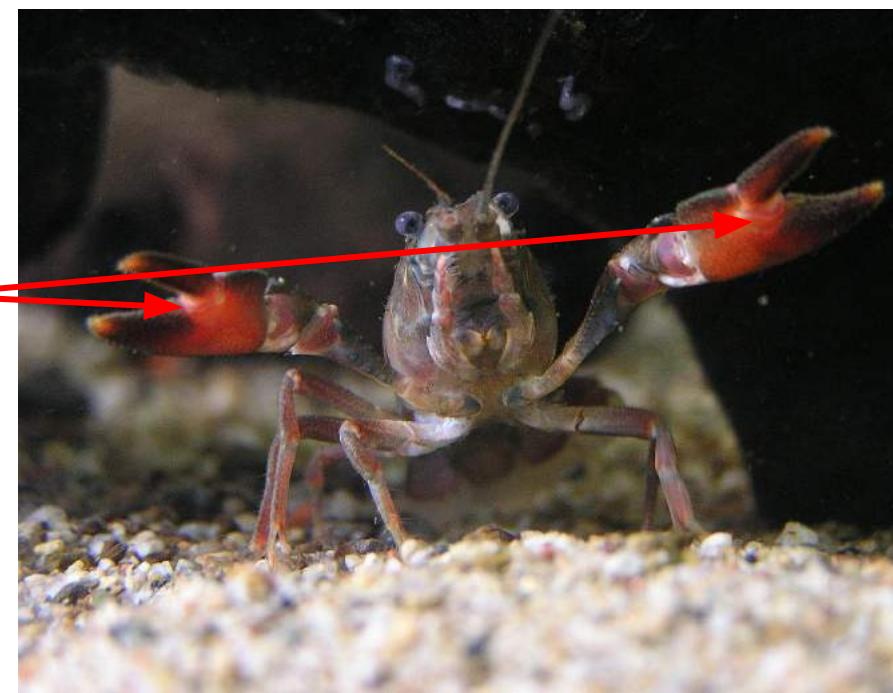


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- bright red coloration on the bottom side

- Length 12-20 cm
- reddish-brown to blueish-grey coloration
- white (blueish) spot on the claws



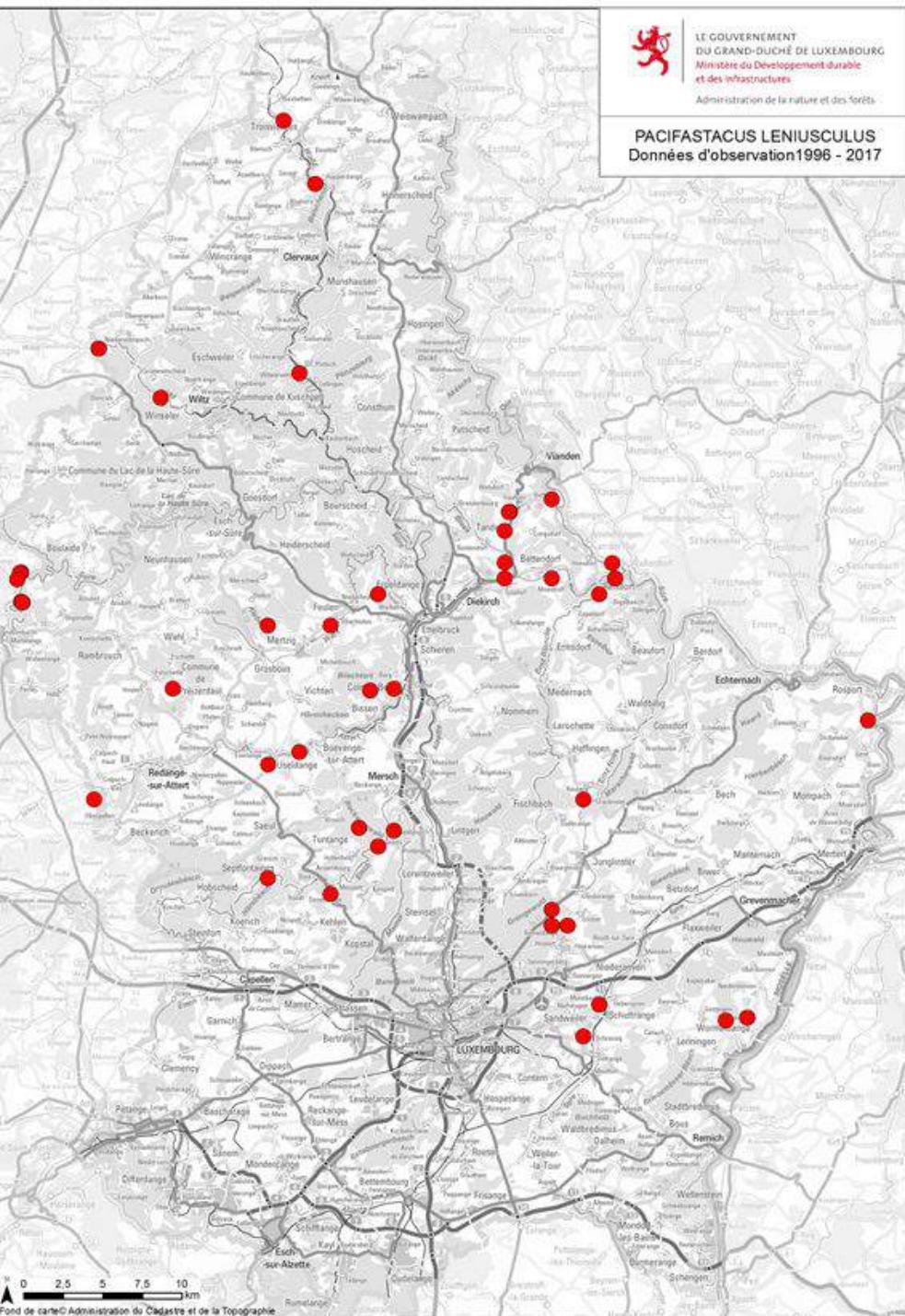


- Origin: Northern America
- Habitat: Aquatic (deep slow-moving streams, stagnant branches, ponds, coastal water)
- Lifespan: up to 20 years (sexual maturity 2-3 Y)
- Pathway: Deliberate introduction
- Introduction in Luxembourg: 1970ies (reservoir of Esch/Sûre)
- Status LU: ISEIA A3 - black list

# Crayfishes - *Pacifastacus*

## Occurrence in LU:

Medium to large rivers  
(e.g. Alzette, Sûre,  
Wark, Eisch, Mamer,  
...), ponds





*Procambarus clarkii* Girard, 1852

EN: Red swamp crayfish

FR: Ecrevisse de Louisiane

DE: Roter amerikanischer Sumpfkrebs



- Length: ca. 15 cm
- Raised bright red spots on body and claws
- General coloration: dark red to black

# Crayfishes - *Procambarus clarkii*



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- Origin: Southeastern parts of the US and Northern Mexico
- Habitat: Aquatic (slowly flowing rivers, marshes, reservoirs, rice paddies)
- Lifespan: 5-6 years
- Pathway: Deliberate introduction, aquarium trade
- Occurrence in Luxembourg: No
- Status LU: ISEIA A0

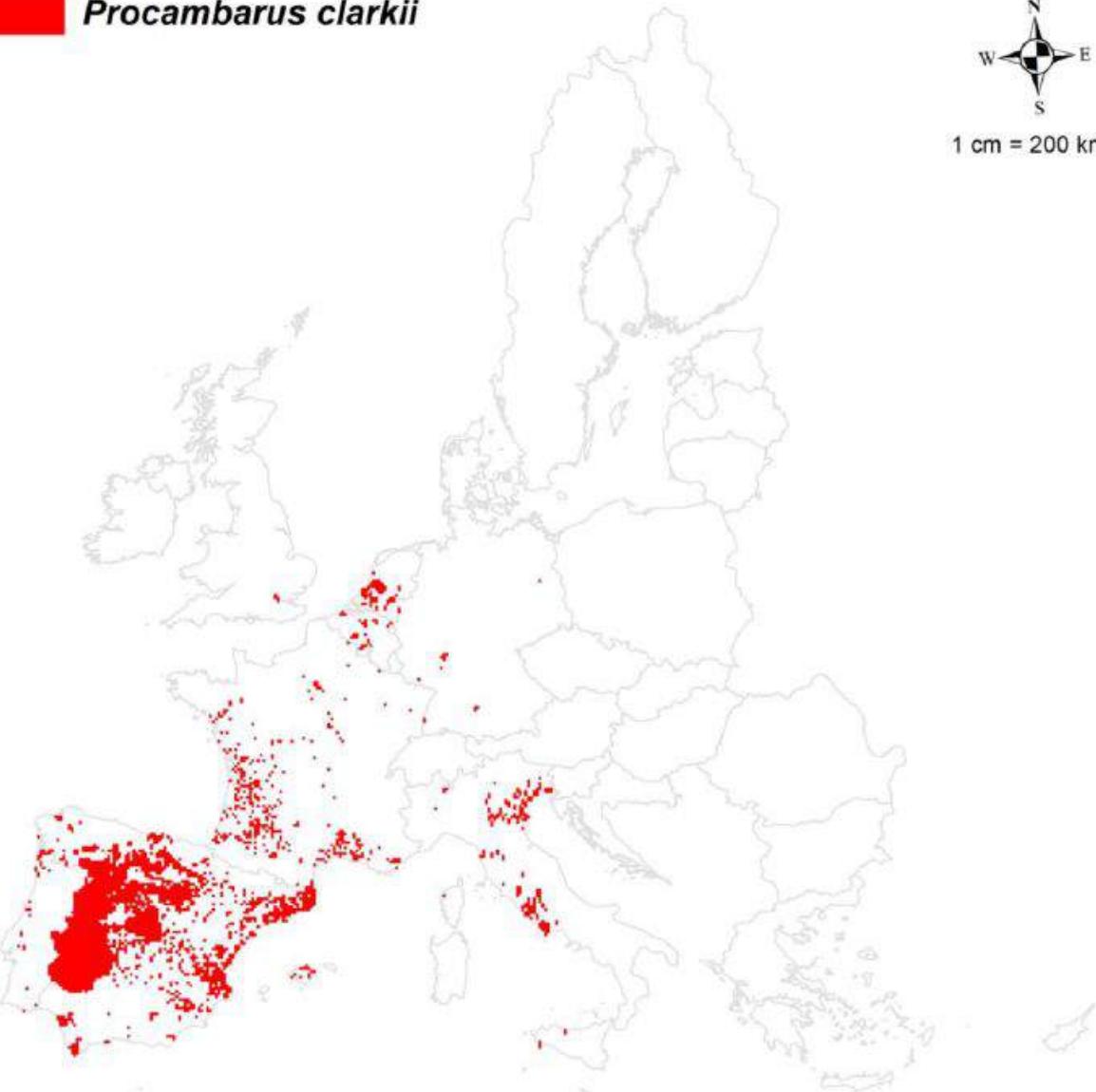


# Crayfishes - *Procambarus clarkii*



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***Procambarus clarkii***





## *Procambarus fallax* (Hagen, 1870) f. *virginalis*

EN: Marbled crayfish

FR: Ecrevisse marbrée

DE: Marmorkrebs



- Length: max. 8 cm
- Lateral parts of the front carapace marbled
- Small and lean claws

# Crayfishes - *Procambarus fallax f. virginalis*

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- Origin: Northern America/Southeastern USA  
(single clone => macromutation of *P.fallax*)
- Habitat: Aquatic (lentic rivers, ponds, lakes)
- Lifespan: 5-6 years
- Pathway: Deliberate introduction, aquarium trade
- Occurrence in Luxembourg: ?
- Status LU: not evaluated

# Crayfishes - *Procambarus fallax f.*

*virginalis*



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***Procambarus fallax f. virginalis***



1 cm = 200 km





## Invasive properties

- Early sexual maturity, high reproduction rate
- Very tolerant to different environmental conditions (wide range of water types and quality: low temperatures, dry conditions, pollutions)

## Impacts on aquatic ecosystems:

- Vector species for the crayfish plague
- Prevents occurrence of indigenous crayfish populations (*Astacus Astacus*, *Austropotamobius torrentium*) => direct competition for habitat and nutrition





*Pseudoraspora parva* Temminck & Schlegel, 1846

EN: Topmouth gudgeon

FR: Goujon asiatique

DE/LU: Blaubandbärbling





- Origin: Eastern Asia
  - Habitat: Aquatic (rivers, streams, ponds, lakes, reservoirs)
  - Pathway: Restocking measures (fish food, companion species), aquarium trade
  - Occurrence in Luxembourg: 2005, 2008, 2016
  - Status LU: ISEIA C1
- Impacts on aquatic ecosystems: vector of a unicellular parasite, tolerant & ubiquitous

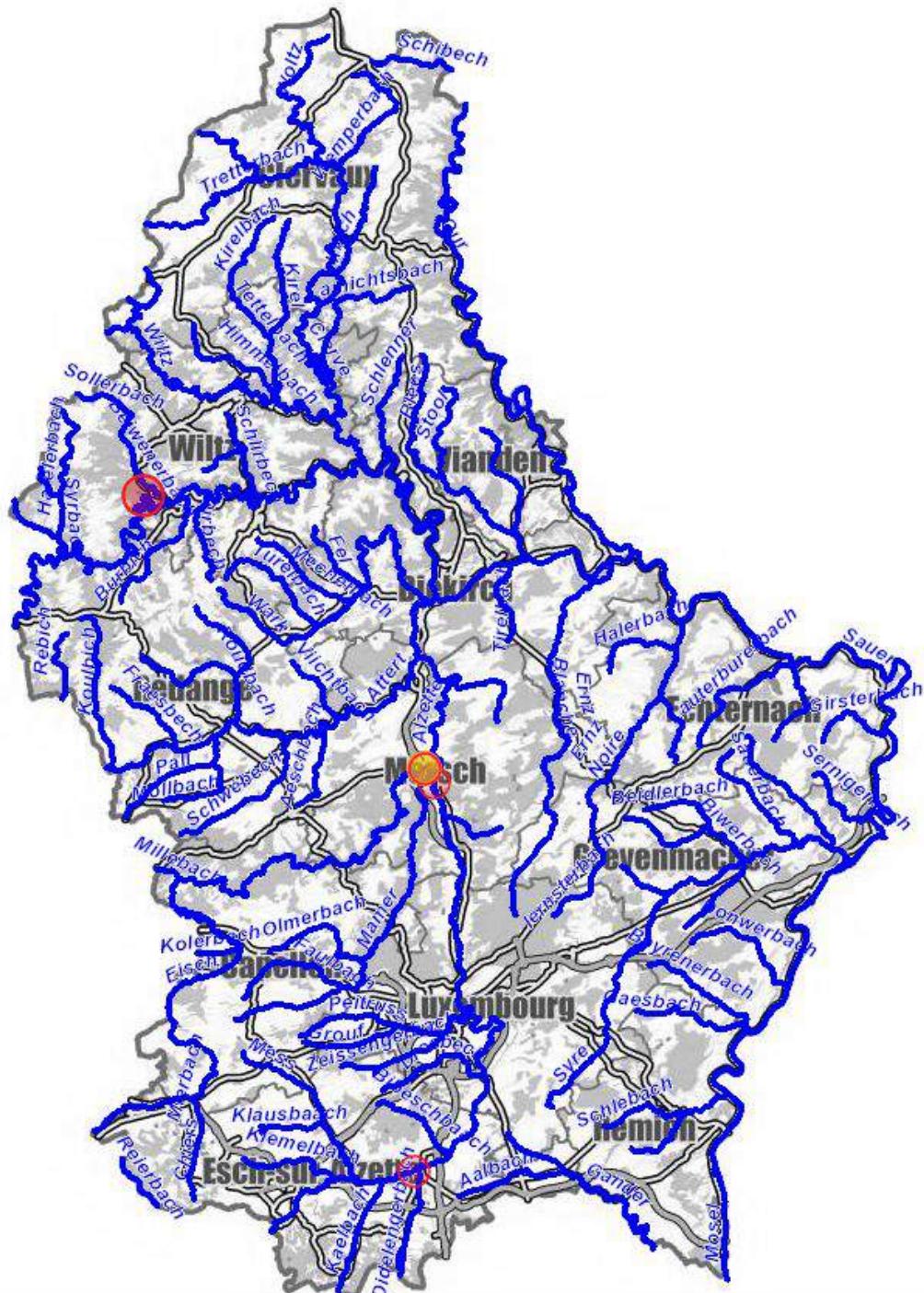
# Fishes: *Pseudoraspora parva*

## Occurrence in Luxembourg:

- Haute Sûre, 2005

### WFD monitoring:

- Alzette (Fennange), 2008:  
24 individuals
- Eisch (Mersch), 2016:  
5 individuals
- Alzette (Mersch), 2016:  
48 individuals





*Percottus glenii* Dybowski, 1877

EN: Amur sleeper

FR: Goujon de l'amour

DE: Amur-Schläfergrundel



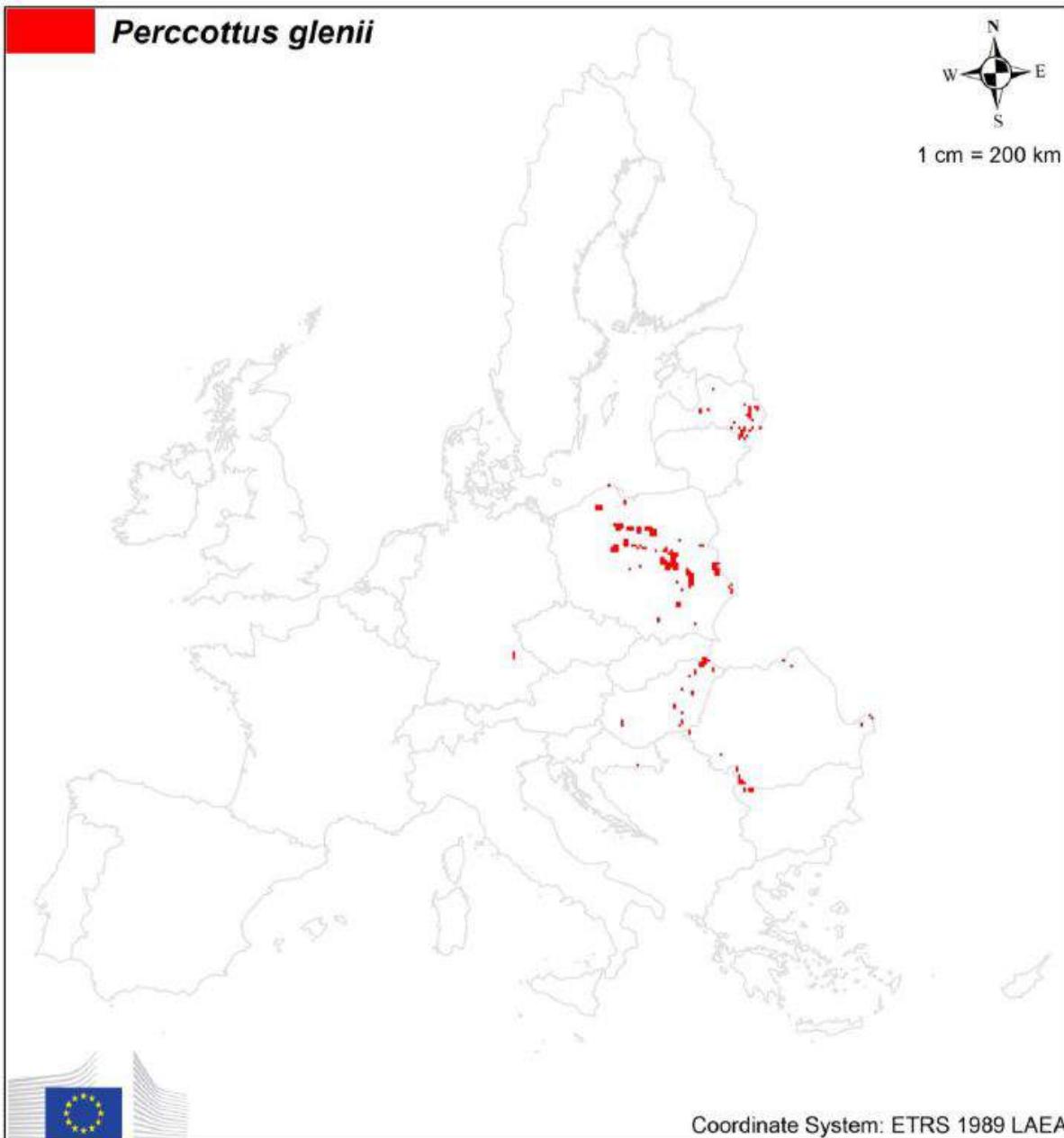


- Origin: Eastern Asia (Amur basin)
  - Habitat: Aquatic (Estuaries, ponds, slow-moving streams with dense vegetation)
  - Pathway: Aquarium trade
  - Occurrence in Luxembourg: not detected so far
  - Status LU: not evaluated
- Impacts on aquatic ecosystems: Important predator (amphibians, fish juveniles, invertebrates, crayfish), tolerant to different environmental conditions (O<sub>2</sub>, dry conditions)

# Fishes: *Percottus glenii*



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# Merci de votre attention!

Invasive alien species  
EU regulations and  
challenges for Luxembourg  
**Luxembourg, 20 March 2018**  
**National Museum of Natural History**



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