

A call for standard terminology for lamprey life stages



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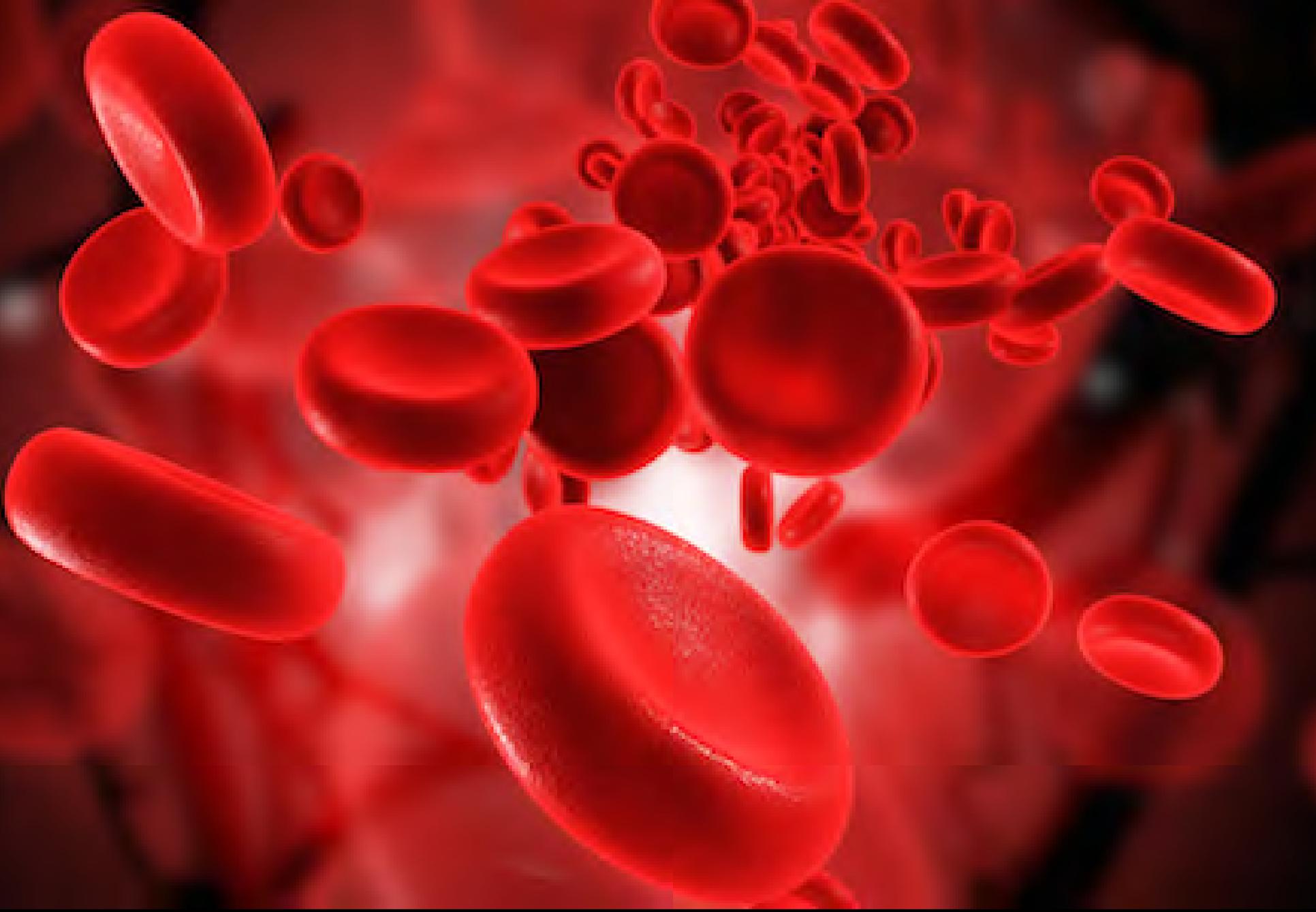


ESSAY

A Call for Standard Terminology for Lamprey Life Stages

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Clemens 2019 *Fisheries* magazine



Terminology

- Accurate
- Precise
- Simple
- Intuitive





Life Stages

Larvae



Juvenile



Adult



Juvenile

Haematophagous

Brown

Kelt

Metamorphosed

Outmigrant

Mac

Emigrant

Macrophthalmia Eyed

Transformer

Larva

Macrophthalmia

Adult Silver

Ammocoetes

Peer-reviewed

ASFA: Aquatic Sciences and Fisheries Abstracts

[Basic Search](#)

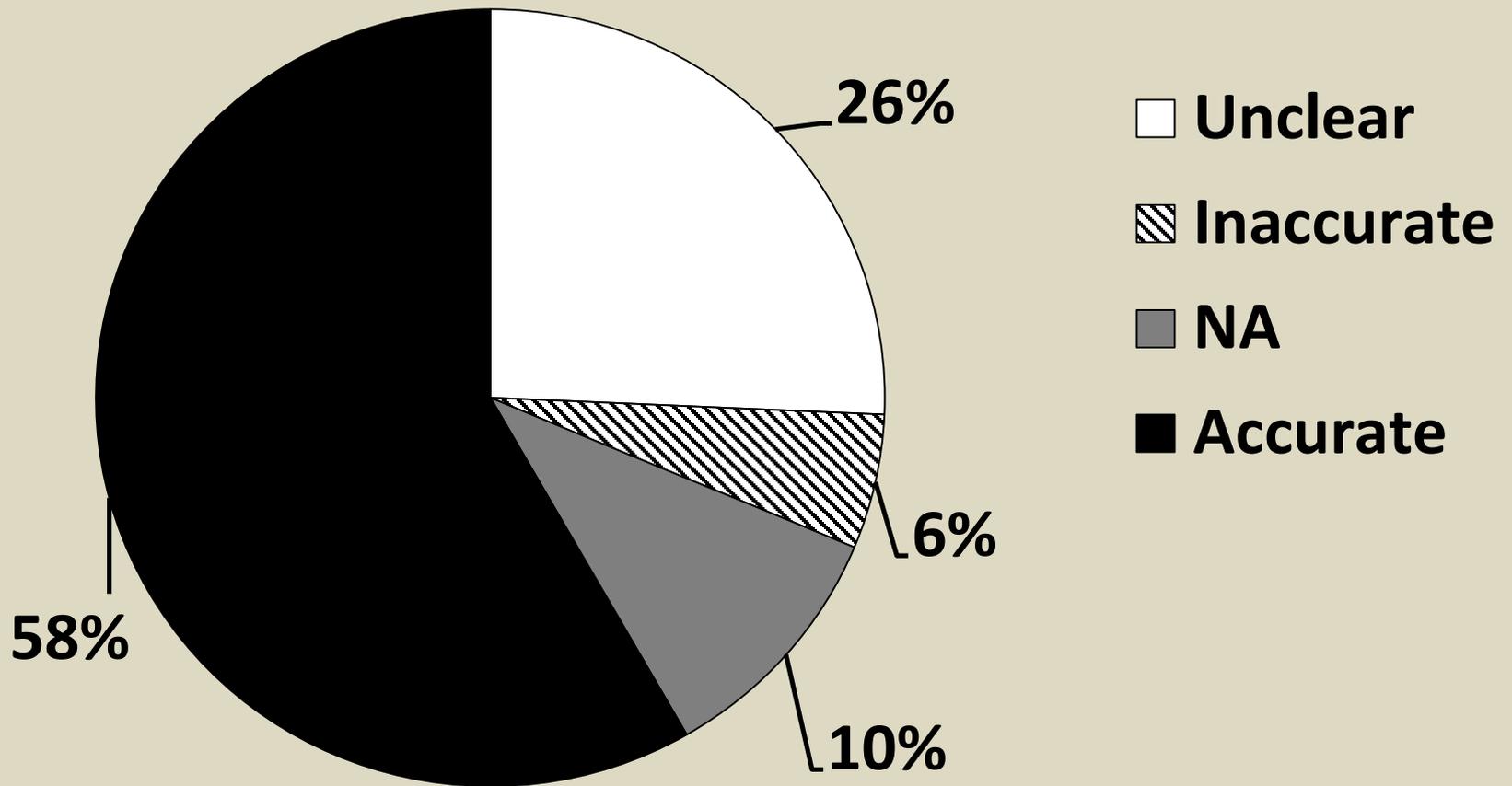
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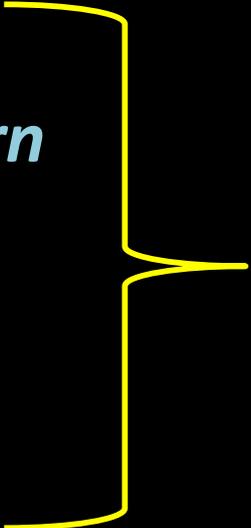
[Change databases](#)

- **2010 – present**
- **144 articles**
- **59 journals**

Peer-reviewed



Peer-reviewed

- *"feeds parasitically as an adult"*
 - *"Their complex lifecycle, involving freshwater spawning, juveniles (ammocoetes) that remain in freshwater for up to eight years, and adults migrating to sea before returning to reproduce"*
 - TITLE: *"Juvenile Lamprey"*
 - AB: *"... larval lampreys ... 10 juvenile western brook lampreys Lampetra richardsoni..."*
 - METHODS: *"ammocoetes"*
 - INTRO/DISCUSSION: *"ammocoetes"*
- 

FPC Lamprey Data queries



Find what you want fast:

Juvenile data

Adult data

Useful links

Lamprey photos

Lamprey Data - SMP Program

- [2015 Juvenile Lamprey Passage Query](#): Returns collection count, sample count, mortalities and sampling comments.
- [2015 Juvenile Lamprey Passage Graph](#): Returns passage index vs. river flow graphs for mainstem dams, and collection count vs. river flow graphs for upriver traps.
- [2015 Juvenile Lamprey Mortality Query and Graph](#)
- [Historical Juvenile Lamprey Passage Query](#): Returns collection count, sample count, mortalities and sampling comments for the years 1997 to 2014.

Fish Passage Center Data

- *“Prior to 2011, lamprey were considered an incidental species.”*
- **Prior to 2011:**
 - *Juvenile Lamprey*
 - *Juvenile Lamp*
 - *Juvenile Lamprey, er*
- **2011 onward, “juvenile” data:**
 - Brook Lamprey, Pacific Lamprey ammocoetes
 - Pacific Lamprey macropthalmia [sic]

Edited

Jargon & Inconsistent Terms

• Transformers \leftrightarrow macrophthalmia \leftrightarrow out-migrants
 \leftrightarrow emigrants \leftrightarrow Silver, w/ eyes vs. w/o eyes \leftrightarrow
haematophagous feeding stage

• Adults \leftrightarrow Juveniles

• *Ammocoetes* \leftrightarrow Larvae \leftrightarrow Brown, w/ eyes vs. w/o eyes

• “Lamprey kelt”

(all lampreys die after spawning, Johnson et al. 2015)

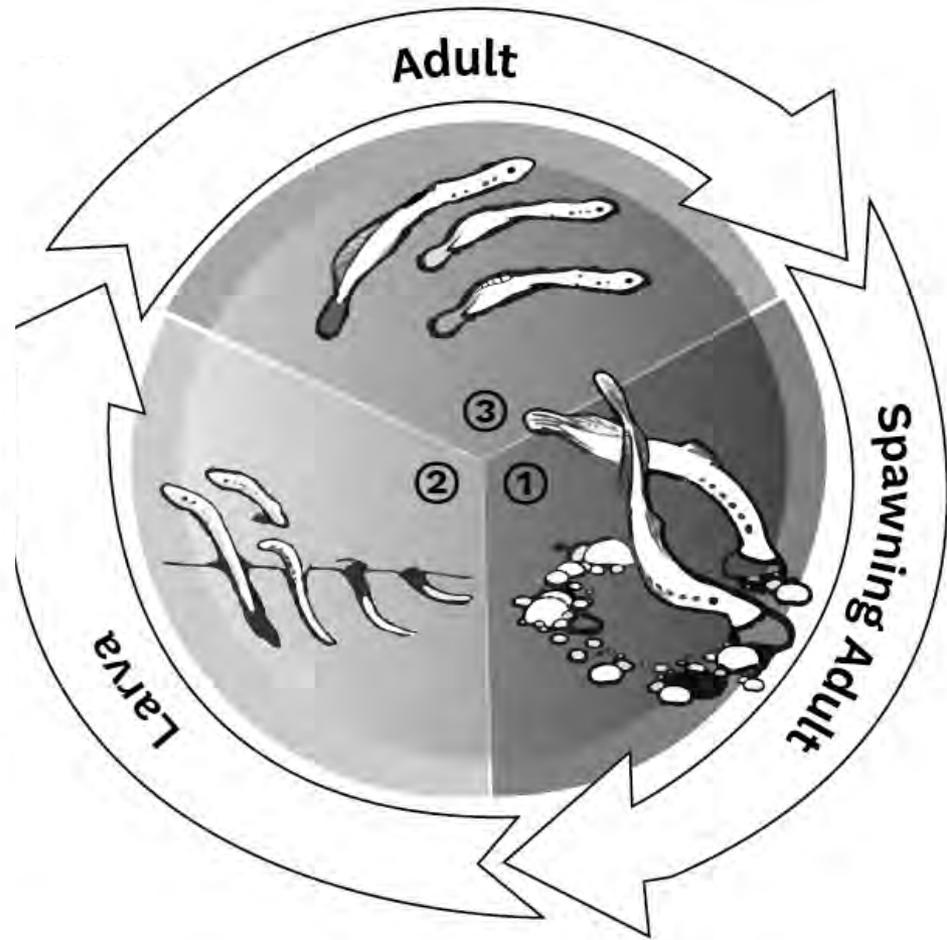
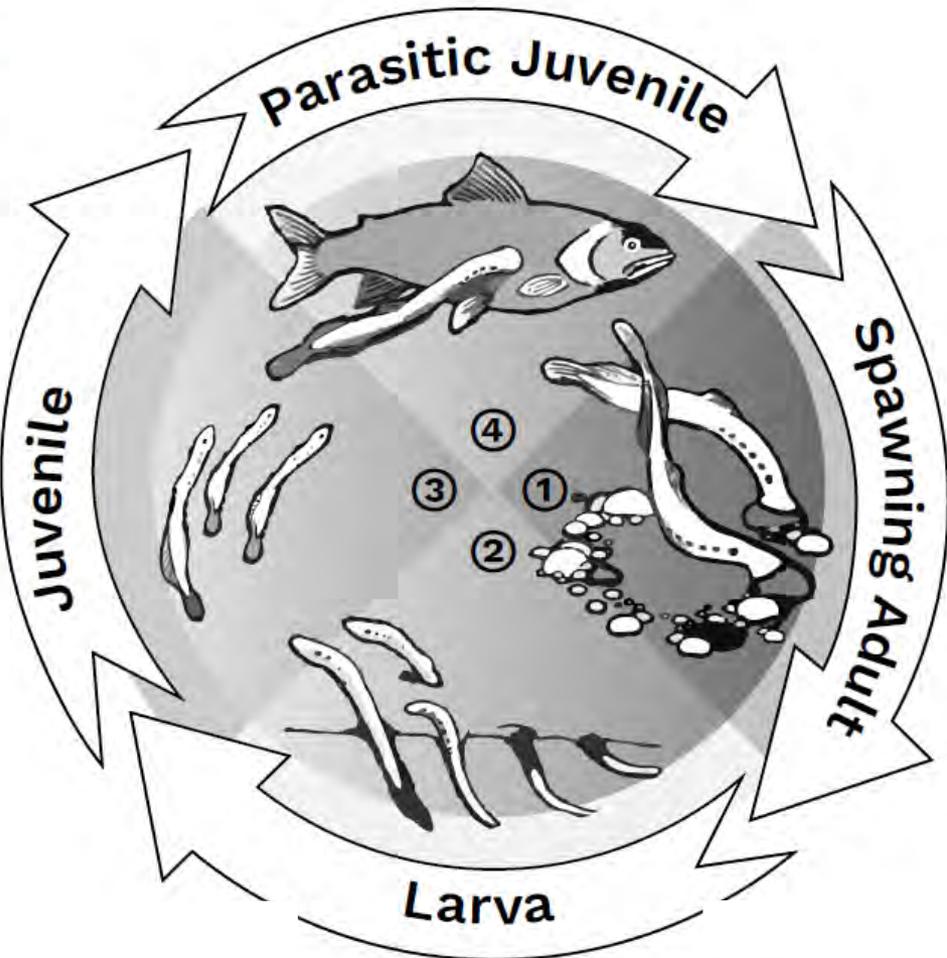
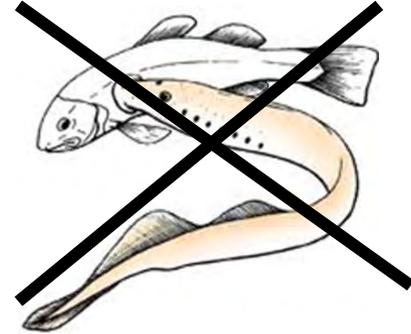
Terminology Problems

- **Unfamiliarity w/ lamprey biology**
- **Non-target species for monitoring**
- **Attempt to diversify language: confusion**
- **Feedback loops in use**



Life Stage	Definition	Species
Larvae	Immature, filter feeders	All lampreys
Juveniles	Transformed individuals	Parasitic lampreys
Transformers	Intermediate to “juveniles” & “adults”	Parasitic lampreys
Adults	Non-feeding, upstream-migrators, spawners	All lampreys





Courtesy GLFC, modified from Hansen et al. (2016) by Rinee Merritt, ODFW



*“When I use a **word**,” Humpty Dumpty said in rather a scornful tone, “it means just what I choose it to mean — neither more nor less.” “The question is,” said **Alice**, “whether you can make **words** mean so many different things.” “The question is,” said Humpty Dumpty, “which is to be master — that's all.” (Lewis Carroll)*