Hampshire & Isle of Wight Amphibian & Reptile Group

Amphibian Surveyors “Dip In” session 9th July 2021

noun
plural noun: **larvae**
1. the active immature form of an insect, especially one that differs greatly from the adult and forms the stage between egg and pupa, e.g. a caterpillar or grub.
2. an immature form of other animals that undergo some metamorphosis, e.g. a tadpole.

Amphibian life stages

Order:	Egg stage:	Larval stage:	Metamorph stage: (Fresh out of a pond/ first year, typically)	Juvenile/ Adult
Anuran Frogs and toads	Spawn (Clumps/strings)	Tadpole	Froglet, toadlet	
Urodela (Caudata) Newts and Salamanders	Eggs (Individual)	Larvae (newt tadpole)	Eft	

We will focus more on newts here, as frogs and toads have mostly undergone metamorphosis. See our “Spawn Spotters” video for more emphasis on spawn and tadpoles.

Photo by Jonathan Cranfield

Egg stage

GCN eggs are roughly 5mm and white with a hint of green/ yellow

Folded grass and eggs

Folded leaves & eggs

Smooth/Palmate newt eggs are roughly 3mm and a pale brown/grey

Photo by Jonathan Cranfield

Larval stage

GCN or not GCN, that is the question!

When it comes to identifying newt larvae, you will only be able to reliably identify great crested newts to species.

Anything that isn't a GCN larva will usually be recorded as a "small newt" larva by default, although if you know the pond only has one species of small newt (smooth or palmate) then you can assume the species accordingly.

If you discover GCN while surveying, but are not licensed to survey for them, you must stop surveying immediately!

Dem toes!

Toes are very long and curved on GCN, but are shorter on small newt larvae

Gills

GCN often have larger outward pointing gills, which can curve forward at rest, small newt larvae's gills tend to be smaller, point outwards and can curve backwards

Eyes

GCN have bold golden eyes

Tails

GCN tend to have a leaf shaped tail with a long filament. Small newt species have a more dagger shaped tail without a filament. GCN's tend to have larger blotches.

Try not to get hung up on colouration… it can vary a lot!

Size can also be subjective at an early developmental stage. Don't forget newts lay eggs between Feb/Mar right up until June/July, so you can get all species present at varying sizes.

Remember the key ID features: 1. tail shape,
2. toes,
3. gills,
4. eyes

Tail shape The only real definitive feature in early development larval GCN (although sometimes the eyes can be differentiated at this stage)

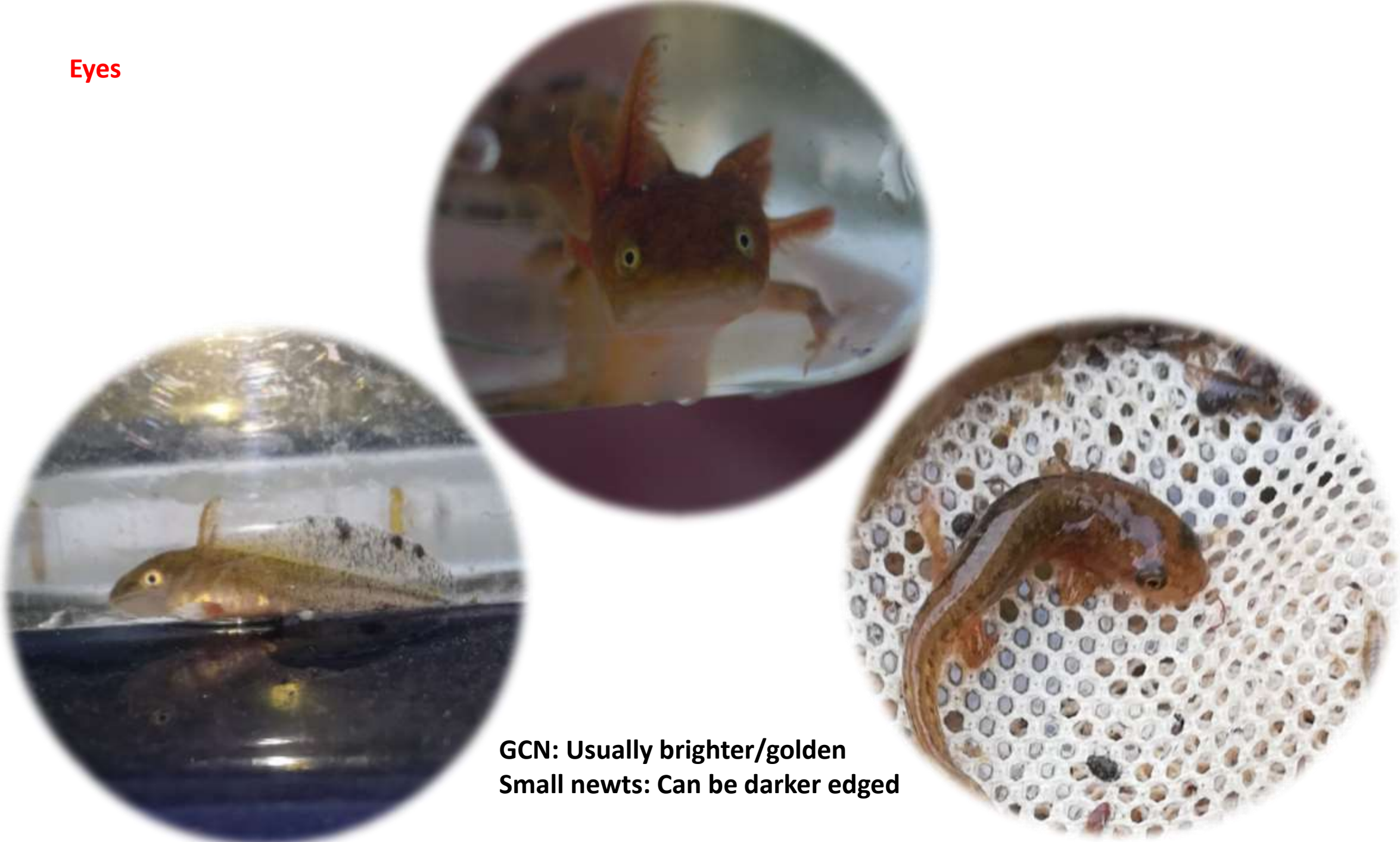
GCN: Leaf shaped with a filament
Small newts: Dagger shaped

GCN can also sometimes have white speckling along the tail edge. Especially useful for ID in early larval stages.

Toes As they develop, you can use the toe length to easily determine GCNs vs small newts. Larval GCN have really long toes, which often look hooked.

Gills **GCN gills are larger and flare forward slightly, while small newts gills flare backwards usually. This can be tricky to spot as water/newt movement can change how they appear.**

Eyes



GCN: Usually brighter/golden
Small newts: Can be darker edged

Metamorph stage
(To infinity and beyond)

Metamorphosis is:

- the gills are absorbed and the newt will begin to breath air via lungs.
- its tail begins to lose the top and bottom fins and thickens up.
- the legs develop more bulk and are able to support its body weight.

When a newt has undergone metamorphosis, it is then called an “eft” and will then live mostly on land for a couple of years before returning to water to breed.

- GCN efts are slimmer miniatures of the adults.
- Smooth newt efts have a pale vertebral line starting at the neck and ending past the shoulders.
- Palmate newt efts have a pale vertebral line starting at the neck and ending past the back legs.

Know your effin' Efts

Timescale

Eggs - From March to June – 3/4 weeks to hatch

Larvae - 3/4 months to metamorphosis

Efts - 2/3 years to maturity

Adults - 6/15 years (GCN have been known to live longer)

PlymouthLive NEWS MORE

Ultra rare Mexican walking fish the Axolotl hatch from family's 'tadpole' frogspawn

'They are critically endangered, they are native to Mexico. As far as where got the only wild ones in the UK and we've got no clue how they got ther

15 COMMENTS

By Katie Timms Chief Reporter
13:07, 2 MAR 2021
UPDATED 21:32, 2 MAR 2021

After taking the species to two different pet shops, it was confirmed the 'frogspawn' was actually axolotl eggs - a critically endangered amphibian also known as "the Mexican walking fish".

"I've found an axolotl"

Leucism is fairly common in newts, and neoteny can also be a consideration in adult sized newts with larval characteristics.

Other pigment mutations can be less common, but still encountered in newts, such as xanthochromism, erythrism, melanism and albinism.

it's a eft

2

That's an axolotl, not a newt.

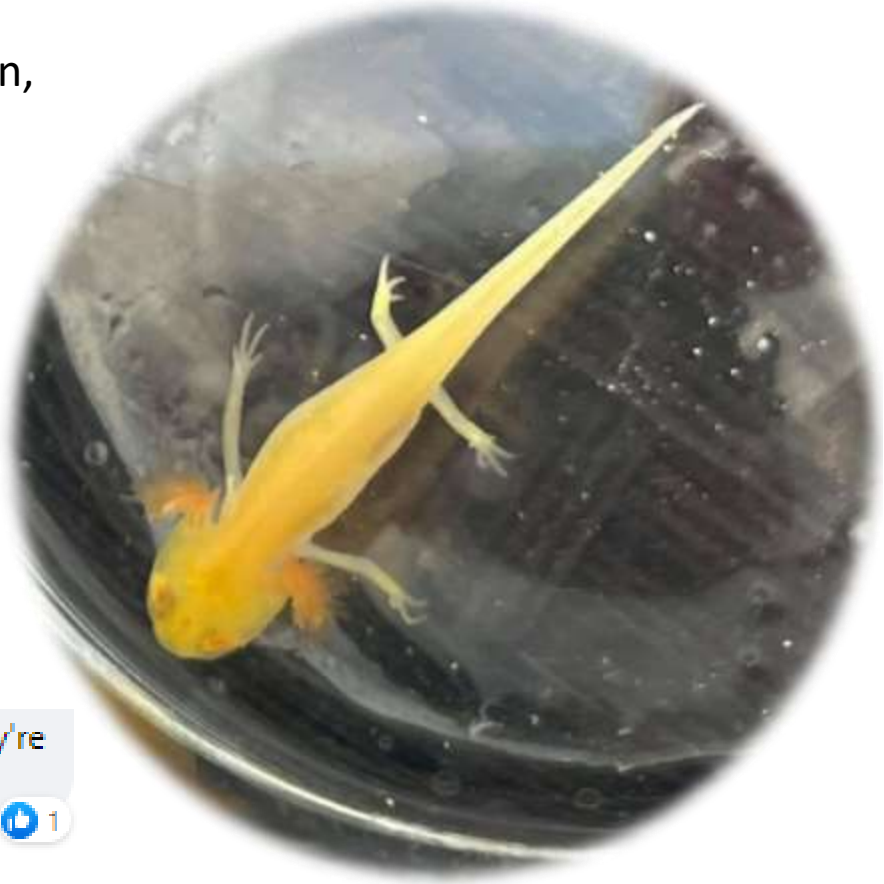
4

· Like · 3 d

I was gonna say that looks like an axolotl, I'm sure they're meant to be tropical?

1

· Like · 3 d



Dont think that's a newt! Think it's a baby salamander!!

2

· Like · 3 d

Awww it looks like a baby axolotl. I suppose even grown axolotls look like half newts!

1

· Like · 2 d

Reintroductions in the media

Comment by Amphibian and Reptile Conservation Trust

18 January 2020

There has been considerable discussion in the last week about re-introduction of amphibians and reptiles following an article in the Guardian (Read the full article). In brief, the article highlights the ambitions of a recently set-up company, Celtic Reptile and Amphibian to captive breed and release various reptiles and amphibians in the UK. ARC supporters have contacted us with concerns that far from assisting conservation, harm may be caused either directly through the company's own work or indirectly through facilitating or inspiring inappropriate releases. These concerns are among the reasons why internationally accepted best practice guidance has been developed to govern species reintroductions.

ARC is a recognised authority in this area, having pioneered reintroductions and habitat management for native amphibians and reptiles, resulting in significant gains. Our work has, for instance, re-established populations of the natterjack toad, sand lizard and pool frog, bringing about a reversal of extinction at the regional or national level. This experience has been achieved in partnership with government agencies and other partners, and the learning outcomes have contributed to international guidance. While reintroductions can be an effective technique to recover species, it is vital that they are well planned and monitored.

ARC has been in discussion with Celtic Reptile and Amphibian, exploring their activities and approach. We are reassured to hear that the newspaper article does not accurately reflect all of their views (for example, they do not advocate releasing the Aesculapian snake, a non-native species). We believe that it is useful to engage with the suggestions put forward by Celtic Reptile and Amphibian, even where they might challenge existing conventions in nature conservation. We welcome the public discussion that they have contributed to, and their efforts to consult others before putting those ideas into practice. Unfortunately, the UK has a history of clandestine releases, and Celtic Reptile and Amphibian have affirmed that they oppose this approach.

ARG UK Policy Statement Concerning Reintroductions

Angela Julian 14 January 2021

Continuing declines of reptile and amphibian species native to the UK need to be addressed. These declines include species loss from parts of their natural range, and national extinction.

Amphibian and Reptile Groups of the UK (ARG UK) supports the network of local volunteer Amphibian and Reptile Groups (ARGs) across the UK. We bring together grassroots enthusiasm for conserving our native species with experts in the field.

Conserving our remaining reptile and amphibian population is our priority, and we understand that reintroductions can be an important tool in amphibian and reptile population recovery. We support reintroductions to restore the historic range of species still present, such as adders, or return of an extinct species to its historical range in the UK, such as the northern pool frog.

However, reintroductions are highly complex and need to comply with relevant legislation and guidance across UK nations. This includes: international (IUCN) guidance; national guidance; and guidance specific to particular animals such as that published on reptiles and amphibians by ARG UK.

Common toad copyright Julian Smart

Therefore, careful consideration, based on robust research, must be given to a number of factors. This includes, but is not limited to, whether the species was native to the UK historically (and its specific native range), the reason the species became extinct (and whether this has been or can be addressed), the availability of suitable habitat to support a viable population, identification of a suitable donor population, and the impacts reintroducing a species may have on existing native wildlife and habitats.

A major risk associated with reintroducing species is the introduction of disease from other parts of the world to UK populations where native species to be released into the wild are bred alongside exotic species.

We recognise that many people currently feel frustrated by a perceived lack of progress with conserving and expanding our native populations of reptiles and amphibians but carrying out reintroductions without full consideration of the aforementioned safeguards or transparency and peer-review is inadvisable. We do, of course, celebrate those who are passionate about amphibian and reptile conservation in the UK and value their effort, skills, and commitment. However, we also hope that those seeking to take such ambitious actions as driving reintroductions follow advice from conservation bodies who have worked in this field for decades, to avoid irreversible and unintended damage to our already fragile reptile and amphibian populations and their associated ecosystems.

ARG UK's guidance on reptile and amphibian reintroductions is available here

"Back-garden" breeding and releasing has gone on since Victorian times at least. Clandestine and potentially illegal releases of native and non-native species are only likely to increase following stories in the press about rewilding projects. Most of these back-garden breeders won't take into account cosmopolitan collections, disease or complete impact assessments for their private projects. It is just a matter of time before new diseases and invasive species take hold, but we are in the front line and well placed to record these for NGO's to follow up on.

The other ones...

(Their season is practically over)

Frog spawn

Toad spawn

Taddies

Common frog/toad

- Eggs laid Feb to April
- Frog tadpoles develop spots/bronze speckling
- Toad tadpoles remain a uniform brown/black
- Takes roughly 3 months to reach metamorphosis

Water frog complex: Pool, Edible and Marsh frogs

- Very large tadpoles reaching up to 80mm.
- Not as finely speckled as the common frog but can have larger blotches.
- Has light mottling at base of tail, and a pale/white belly.
- Young tadpoles have pale markings near the eyes, giving an appearance of a mask.
- Eggs are usually laid throughout May and June. They can often have a second spawning in June/July.
- Metamorphosis is usually in August/September.

Amphibian Surveyors

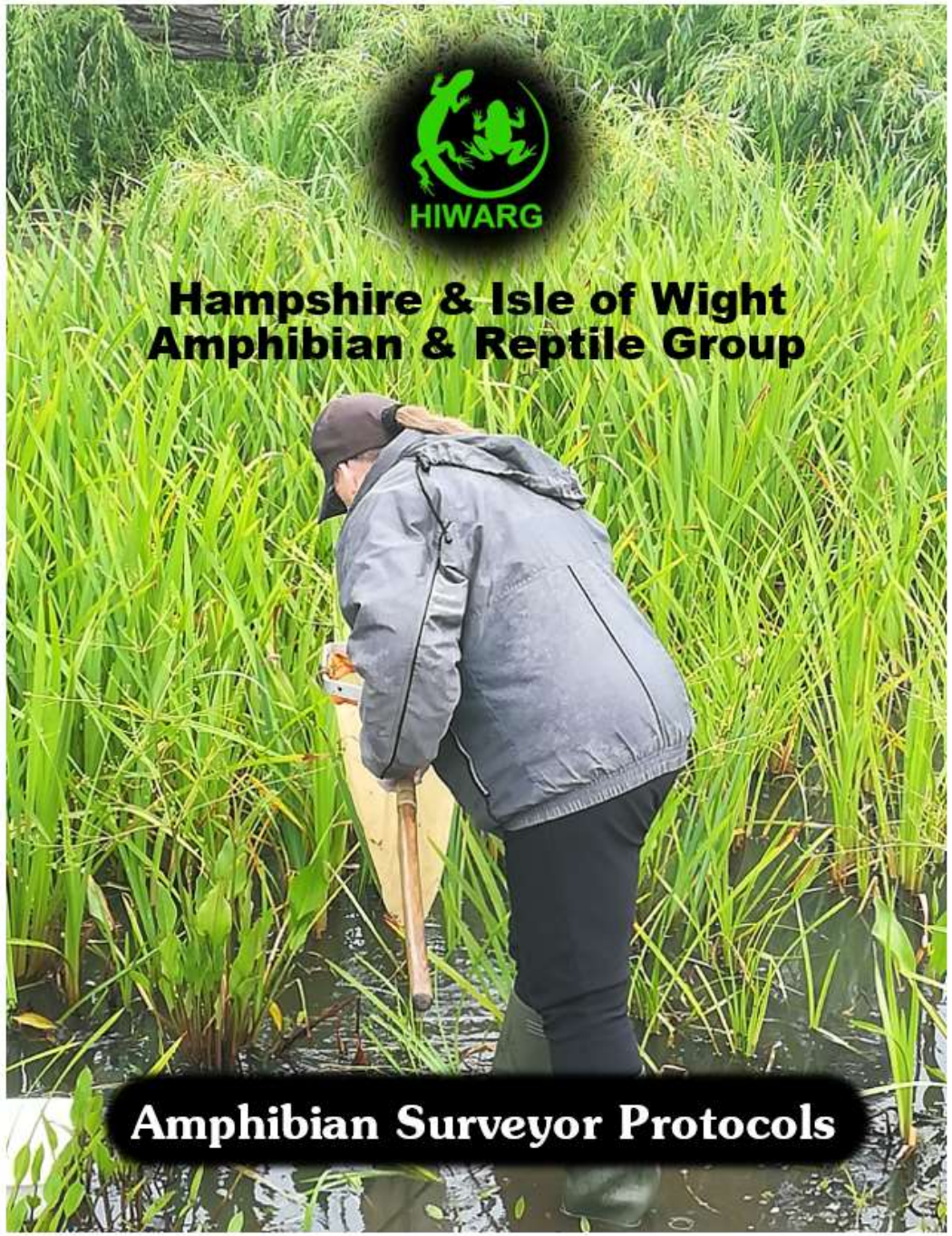
Only use nets if you have specific permission from the landowner. Even on public land, there is no automatic rights to dip.

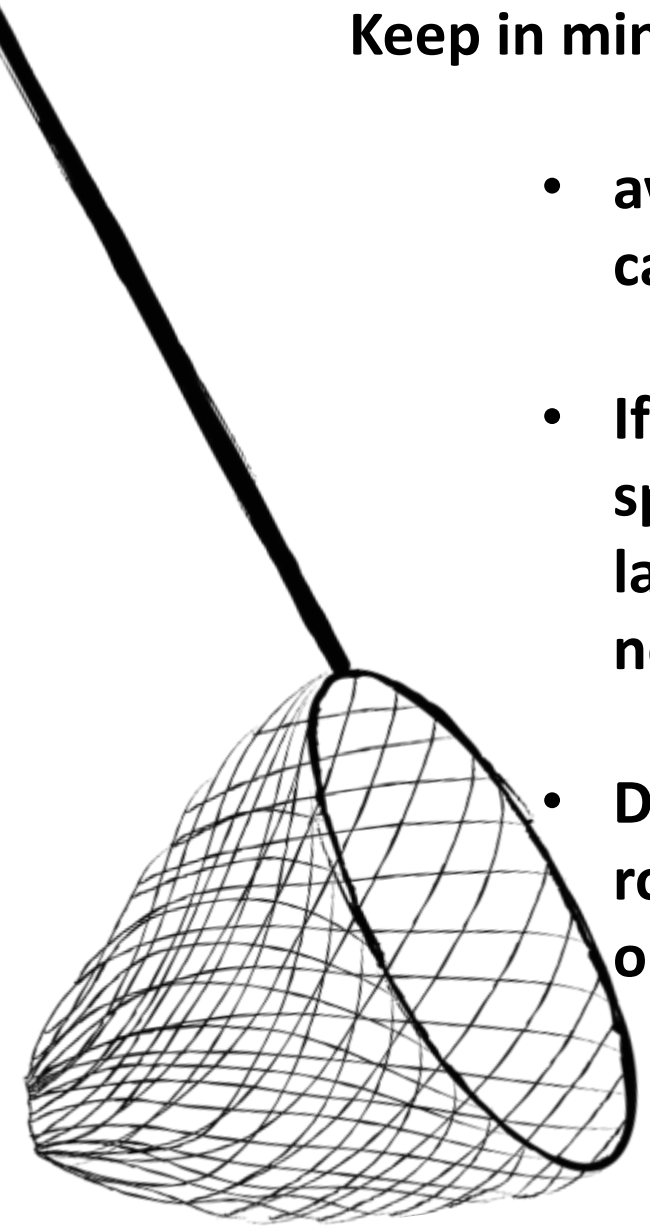
Some ponds may have sensitive species and habitats which could be damaged by insensitive dipping.

Another factor to consider is the spread of disease or invasive non-native species. Chytrid could potentially wipe out the local amphibians if it is introduced on your net from another pond.

HIWARG has a good name for professionalism despite being volunteers, and we have our own survey protocols that we follow closely.

Contact a member of the panel if you are interested in becoming a surveyor with us.





Keep in mind that larvae are vulnerable to handling. Best practice for welfare is:

- **avoid netting in the peak season during May and June, and use with care from July onwards.**
- **If you do use nets when larvae are present, stop netting in that specific pond (or spot if a very large pond) after catching your first larvae. You have already proven it is a breeding pond, continuing to net increases welfare issues and doesn't always prove anything else.**
- **Don't attempt to pick larvae up with your fingers from the net, but roll the net carefully against your finger to gently transfer the larvae or dip the net in water to release.**

STOP THE SPREAD

INVASIVE AQUATIC SPECIES

CHECK-CLEAN-DRY

Info & ID guides

Policies/Health & Safety

- HIWARG Safeguarding Policy and Protocols June 2020
- Buddy System/Lone Working Procedures
- ARG UK Generic Risk Assessment July2020

Identification Guides

- Amphibian Identification - downloadable colour cards
- Newt Eggs & Larvae - downloadable colour cards
- Reptile Identification - downloadable colour cards
- Non-Native Species Identification sheets

Advice and Information

- ARC's "Dogs and Adders" Advice Sheet
- "There is a Snake in my Garden - What can I do?" (ARG UK)

Projects & Citizen Science

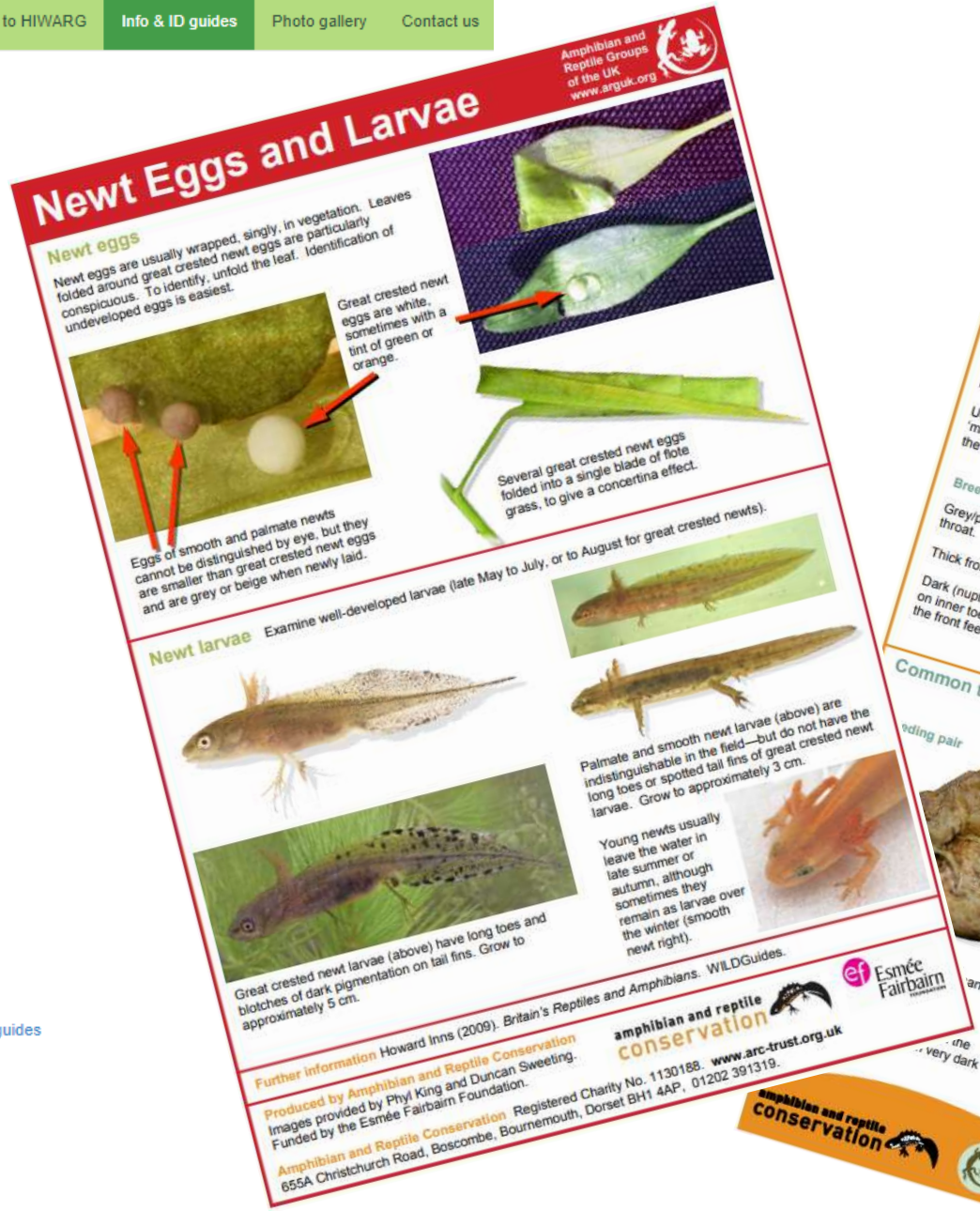
- DARN's 'Slow Worms in Churchyards' project
- 'Amphibians & Reptiles on Allotments' Introduction Leaflet
- "Spawn Spotters" presentation 12 Jan 2021
- Toad Patrol presentation 12 Jan 2021

Habitat Management and Creation

- Creating Garden Ponds - downloadable booklet
- Creating Ponds for Amphibians and Reptiles (Freshwater Habitats Trust)
- Habitat Management guides (Buglife) - Not specifically herp based but a great set of guides
- How to Create Invertebrate and Reptile Mounds (Magnificent Meadows)
- Creating Grass Snake Egg-laying Heaps (ARG UK and RAVON)

Herp Diseases - Recognise & Report

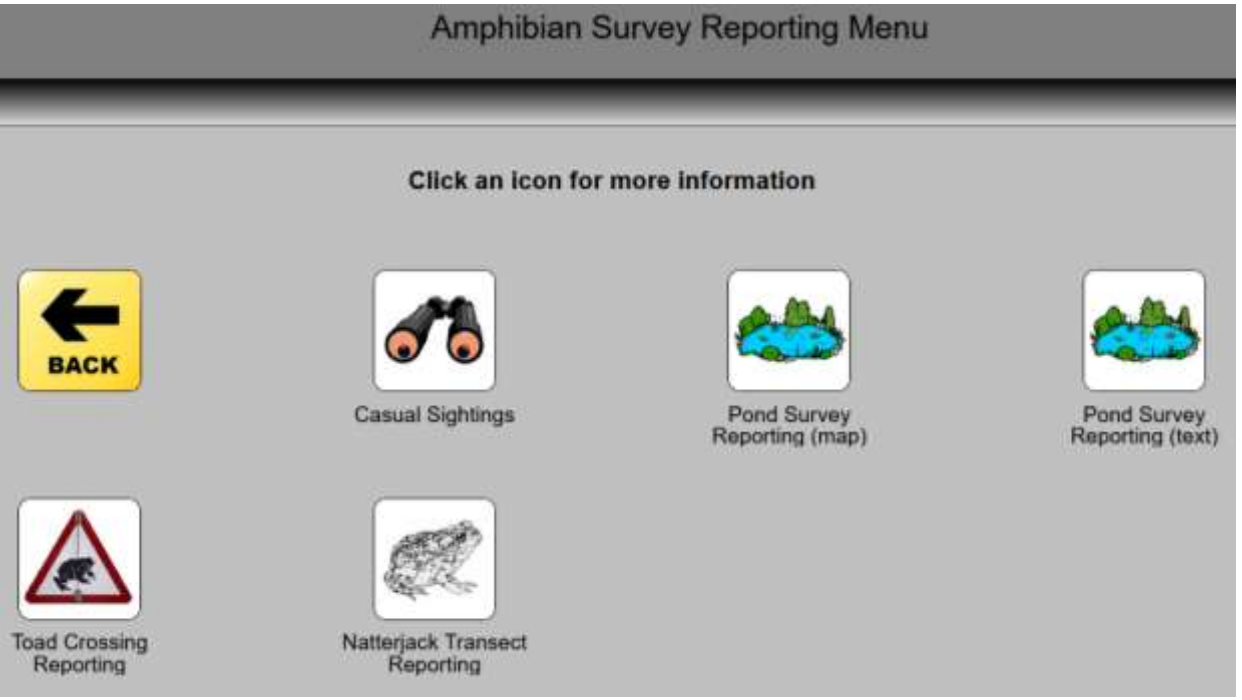
- Advice Note-4: Amphibian disease precautions - a guide for uk fieldworkers
- Snake Fungal Disease
- Toad fly (Lucilia bufonivora)
- Amphibian Chytridiomycosis
- Ranavirus Disease



https://groups.arguk.org/hiwarg

Recording

ARGWEB is the default tool for our surveyors, but Record Pool can also be used by members and non-members.



Reading List

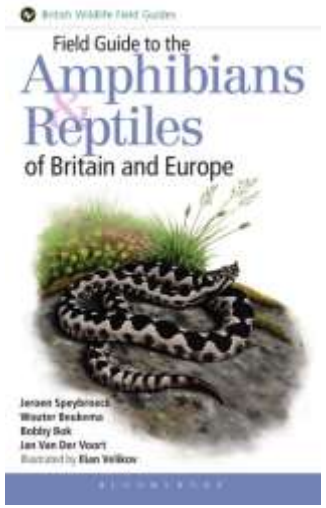
Amphibian Identification (ARG UK/ARC) https://groups.arguk.org/hiwarg & click Info & ID Guides

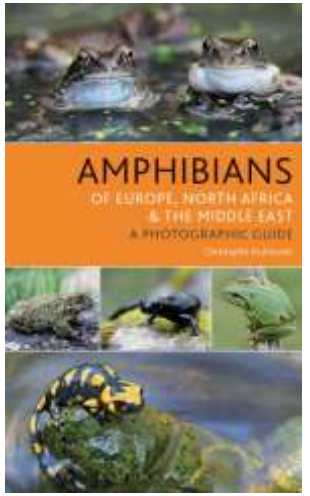
Britain's Reptiles and Amphibians (Princeton Wild Guides) Howard Inns *ISBN 978-1-903657-25-6*

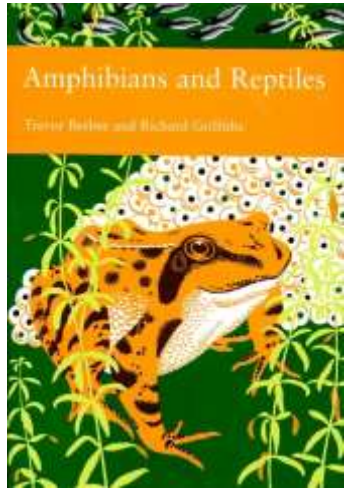
Amphibians & Reptiles of Britain & Europe (Bloomsbury) Speybroeck et al *ISBN 978-14729-7042-8*

Amphibians of Europe, North Africa & the Middle East – A photographic guide
(Bloomsbury) Christophe Dufresnes *ISBN 978-1-4729-4137-4*

Amphibians and Reptiles (Collins New Naturalist) Beebee and Griffiths
ISBN 000-220084-8 (Buy this from Harper Collins, you'll save a packet!)







Found/read an interesting herp book? Post a link or review on the FB group

We

larvae