

## #25 in the Muddling Along series October 4, 2015

### More thoughts on the importance of colour to the fly fisher

In my last effort to clarify the mysteries of UV colours, I realized that it was important to bring up some other points when it comes to how fish perceive colours and the effects of water on the transmission of colour. (just what you wanted, another Science lesson from a former teacher!)

Just as UV light, being shorter in wavelength, is able to penetrate further in both horizontal and vertical directions underwater, so do the other visible colours vary in their penetration according to their wavelength. The colours of the rainbow (ROYGBIV) range from long wavelength (red) to shorter wavelength (violet). The longer the wavelength, the greater the absorption by the water as the light passes through it. (sorry about the treble hooks in the diagram below!)



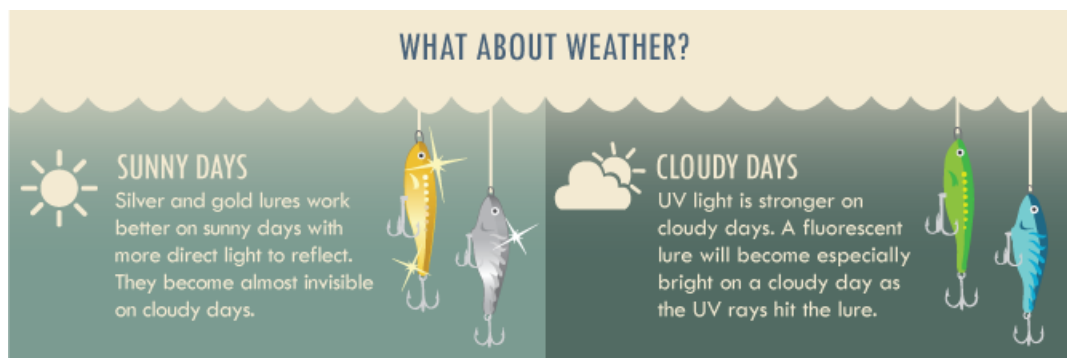
For the fly fisher, this means that when they are fishing at depths greater than 10 or 15 feet, they need to realize that colours near the red end of the spectrum gradually fade into uniform greys and blacks in

colour. For that reason, it is better to use flies tied with UV materials or with colours near the violet end of the spectrum when targeting fish at greater depths. The flies will look more like their surface colour that way rather than being uniformly gray!

The penetration depths of the colours is strongly influenced by the clarity of the water as well—suspended materials will cause an increased absorption of light waves at all wavelengths.

Another factor which must be considered is the intensity of the light from the sky and whether it is shaded out by overhead vegetation or cloud cover. In the shade or on a cloudy day or early or late in the day, light is not going to penetrate the water as well. This might be a reason why a common adage for fly fishers is “Bright day . . . bright fly. Dark day . . . dark fly”. The dark flies will be more visible to the fish on the dark day because the blacks, violets and blue/greens will be more visible to the fish than the washed out greys of the reds, oranges and yellows.

A cloudy day will also allow more UV light through than visible light so UV Reactive and UV reflective materials will be more visible. Shiny materials (like metallic beads and tinsel) will work better on a sunny day because they have more light to reflect.



In summary (whew! No more science--now what do we need to know as fly fishers and tiers?)

- Using dark colours and ones of shorter wavelength (violet, blue, green) is OK anytime—they will be seen by fish under all conditions.
- In bright light conditions and at shallower water depths (less than 15 feet approximately) it is OK to use the brighter colours (reds, oranges and yellows) and not worry about the colours fading to grey. (mid day rather than dawn or dusk and out in open, not in the shade.)
- Take the clarity of the water into account—in a crystal clear lake or river you can fish at greater depths.
- Realize that the decrease in visibility also happens in the horizontal direction as well—if you are casting to fish that are more than 15 feet from your fly, there is going to be a loss in colour for those fish as well!

- To overcome some of these problems, the use of some UV materials either as wings, tails, collars or tags can increase the chances of your fly being seen (especially at depth and on cloudy days.)