

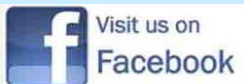
# Nelson Trout Fishing Club

Issue -157 July 2017

Read the newsletter online at: [WWW.nelsontroutfishingclub.com](http://WWW.nelsontroutfishingclub.com)



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**Ph 03 3383131**

59 Lincoln Rd

Email: [info@fishermansloft.co.nz](mailto:info@fishermansloft.co.nz)

Christchurch Web: [www.fishermansloft.co.nz](http://www.fishermansloft.co.nz)

## Club Contacts Executive:

President Michael Stevenson 5469632 [mpstevenson@orcon.net.nz](mailto:mpstevenson@orcon.net.nz)  
Past President: Maree Peter [maree@ellisauto.co.nz](mailto:maree@ellisauto.co.nz)  
Secretary: Jean Willis 547 6432 [willisdj@xtra.co.nz](mailto:willisdj@xtra.co.nz)  
Treasurer: Maree Peter [maree@ellisauto.co.nz](mailto:maree@ellisauto.co.nz)

## Committee

Richard Breakspear 5419050 [richard.annette@xtraco.nz](mailto:richard.annette@xtraco.nz)  
Peter Lawler 5489753 [plawler@y7mail.com](mailto:plawler@y7mail.com)  
James Jemson 7443123 [nelsonjemsons@gmail.com](mailto:nelsonjemsons@gmail.com)  
Brian Richards 0274349165 [brichards165@gmail.com](mailto:brichards165@gmail.com)  
Don Clementson 5448867 [info@free2view.co.nz](mailto:info@free2view.co.nz)  
Barry Howell 5443069 [bsjahowell1@gmail.com](mailto:bsjahowell1@gmail.com)  
Jeffery Furrows 0275519002 [jeffreyfurrows@msm.com](mailto:jeffreyfurrows@msm.com)  
Ian Sowman

**Meet and Greet New Members:** Ray Day and Pete Lawler

**Fishing trips:** **Looking for somebody to run this job**

**Fly Tying Convenor:** Michael Stevenson

**Club Librarian:** Cameron Reid 547 1197 [camnvc@xtra.co.nz](mailto:camnvc@xtra.co.nz)

**Editor Magazine :** Richard Breakspear

**Newsletter Distribution:** Brian Richards

**Trophy Master** **Looking for somebody to run this job**

**Club Sponsorship & Newsletter Advertising:** **Needed**

**Club Speakers:** Committee members

**Club Night Tea/Coffee:** Maree Peter

## Past Presidents:

03-06 Richard Boyden 6-08 Lester Higgins 08-09 Ross Walker  
09-11 Dennis Ealam 11-13 Ray Day 13-15 Tony Entwistle  
15-17 Maree Peter MGP

## NELSON TROUT FISHING CLUB

**Meets once a month at: Fish and Game Offices, 66 Champion Road, Richmond.**

**Normally the 3rd Wednesday of the month 7.00pm.**

*Please phone 5224166 if unsure.*

Any views or opinions expressed in this newsletter are not necessarily those of the committee, or club editor.

[www.nelsontroutfishingclub.com](http://www.nelsontroutfishingclub.com)

**Cover page: .....Camron's 8.5 pound brownie**

## **President's Report August 2017**

This is my first President's Report for the Newsletter and I thought I'd tell you a bit about myself.

I was born and raised in Southern Oregon in the Pacific Northwest of the United States. I have hunted and fished from a young age and even caught my first trout (a planter rainbow) while sitting on my Father's shoulders when I was just 6. My fishing was exclusively spin fishing as a youngster, usually using bait. Fly fishing was limited to using a bubble with the spinning tackle. I first started casting a fly rod as an adult using an old production bamboo rod of my Father's. I soon graduated to a fiberglass Fenwick that I usually used for largemouth bass.

I managed to graduate from University with a degree in Biology in 1973. Some year's later I met and married a lady from New Zealand while working in the wood products industry. Following a temporary layoff, we decided to move to New Zealand where we felt I had a better chance to use my degree. We arrived on labour Weekend 1985 and I got a temporary job with the MFish on 31 January 1986 and have been involved with marine fisheries research ever since.

I soon took up fly fishing in earnest and when we moved to the Nelson area in 1988, I began my education in chasing large brown trout. I joined the Nelson Trout club 4-5 years ago (Member #199) and have been on the Committee for two years. I am looking forward to my time as President and am honoured to have this opportunity.

I encourage all members to participate in club activities and come to hear our guest speakers. It is your club and you might as well get as much out of it as you can.

Michael Stevenson

# Colour Vision in Trout Eyes



Class Code:

406

Short Title:

Colour Vision As Seen By Trout

Syllabus:

In this class we will use science to answer the following questions:

Do trout have color vision?

How does their perception of color differ from the human perception?

Does their environment affect their perception of colour?

How does this information get used when selecting and presenting lures?

Course Content:

Human Eyes:

In order to understand how colors are perceived by trout, we must first understand how color is seen by us humans. Colour is a physiological effect which is a sensation that occurs as the brain responds to neural signals arriving from the retina of the eye. The retina has "rods" and "cones" that are two types of receptors. The rods register the presence of light in black and white (monochrome) while the cones register the colors. Note that there is no such thing as colored light, but only light of different wavelengths.: *Cont*

There are three sub-types of cone receptors in the retina of the human eye. Each interprets a different wavelength and sends its own signal to the brain: red, green, or blue. This is the same way the RGB leads feed colour to a computer display. Combinations of these signals offer variations of the complete spectrum of colors. We see a rainbow as a gradation of colors because the wavelengths overlap. The ratio of these signal strengths determine the shade of color.

Each object has some chemical characteristics that absorb most wavelengths of visible light and reflect only a narrow band. This narrow band is perceived as colour by the mechanism of the eye. Remember, we are not seeing a colored object, but an object that reflects light in different wavelengths.

The three types of cones in the human eye each contain a photo-sensitive pigment that has the capacity to absorb a range of light wavelengths. Each cone is characterized by the wavelength at which maximum or peak absorption occurs. The three are as follows:

erythrolabe; peak absorption at 565nm; red

chlorolabe; peak absorption at 535nm; green

cyanolabe; peak absorption at 440nm; blue

Light wavelength is measured in nanometers and the visible spectrum ranges from 700nm (red) to 400nm (blue-violet).

Trout Eyes:

Trout, on the other hand, have four receptors, and the four peaks are 600nm, 535nm, 440nm, 355nm.

The second and third conform to the green and blue cones in humans.

The first is similar to the human red, but its sensitivity range includes longer wavelengths than humans. The fourth is outside the band of wavelengths visible to humans and is referred to as "ultra-violet".

However, the fourth class of cones disappears by the time a trout is two years old.

It is thought the small fauna which feeds the immature trout, reflects the UV radiation and therefore the small fauna are more visible to the trout. It is also suggested that UV cones reappear annually in mature trout in time for spawning runs. It is also speculated that these UV cones are used to track polarized light as a means of navigating to the spawning locations.

*Cont*

It is interesting to note that the long wave (red) cone response of the trout is peaked at a point where the human's response of the "red" receptor is diminishing. This means that where humans see a dark reddish color, the trout sees a much brighter color and in a lower visible light condition. Researchers tell us that the trout's ability to discern small differences in shade is highest in blue, second but much lower in red and lowest in green. Therefore shades of green will be less important than the contrast of the body or thorax.

#### Trout Environment:

Although trout have color vision similar to humans, there are major differences due to the available light in their environment. Their vision is limited by the quality of light which enters the underwater world. The advantage of their 4-cone system can be realized only if the full spectrum of sunlight from infra-red to ultraviolet is available to them.

In clear water, the short blue to ultraviolet wavelengths are dispersed causing the background appear blue. This is what occurs in the atmosphere causing the sky to appear blue and even bluer over water. Therefore when a trout sees the shiny scales of a fish, the image of the fish is blurred at short distances and invisible at longer distances.

Directional sunlight passing through water will tend toward red and becoming redder with increased distance just as it does in the atmosphere at sunrise and sunset. Hence, the old adage "Red at nite, sailors take delight, red at morning, sailors take warning". However, water absorbs long light wavelengths; therefore, the energy of the longer wavelengths, corresponding to the red end of the spectrum, is absorbed and converted to heat. At longer range, the absorption of the long wavelengths and blurring of the image due to scattering become significant. For example, a red object seen through 12 feet of water has no wavelengths and will appear black. Note that the reflection of light diminishes very quickly as distance increases, so at 6 feet, there may be very little color perceived. Near the surface, reached by the full sun, at close range, it is reflected brighter red than seen by humans.

However if the object is white and capable of reflecting all incident wavelengths, it would remain visible at longer ranges. So what! The flash of mirror like reflection from a shiny surface such as tinsel or the scales of a fish will be seen over a much greater distance than body color of your fly. *Cont*



It is clear that trout do indeed have the mechanism for full color vision and in a somewhat wider range as well. Red is brighter to the trout but the color diminishes quickly with distance while white will be visible over greater distances. Impurities in the water make color less important but white will be seen more readily. Water impurities, like minerals or staining, can selectively filter out various wavelengths of light. These impurities tend to remove the ultraviolet and blue wavelengths in a short distance and allow long wavelengths to penetrate the farthest but again not as far as clear water. To summarize, the color vision of the trout is limited to relatively clear, shallow water and at short distances.

What about fluorescent colors?

Fluorescence occurs where a surface has the property of absorbing ultraviolet radiation and converting its energy to be reflected as a longer wavelength within the visible range of the eye. This converted reflection is added to the reflection of normally visible light wavelengths, causing it to appear more intense than one would expect to be possible. Divers have noted that in tainted water fluorescent red, orange, and yellow are the most visible, and in clear water any fluorescent paint will do. At long distances or in deeper water, fluorescent yellow and green are more visible. Note that UV penetrates deeper than the visible blue wavelengths, so all fluorescent colors are visible to the UV limit, which is beyond the depth at which their natural color becomes invisible.

Effects of Low Light:

However, in tea stained water often found in trout streams, the opposite is true. The UV wavelengths are filtered out first, but the distance affecting the red wavelengths is not affected by the stained water. Therefore, fluorescence is useless in stained water a short distance below the surface. However, near the surface where it receives UV rays, the red and orange fluorescence will be visible at a greater distance than the shorter wavelength colors of blue and green.

An important feature of the trout's vision is that the rods and cones physically swap places at the start and end of daylight. In the evening the cones that need high light levels to operate and that provide the color response are withdrawn into the surface of the retina and the rods tend to rule. At dawn the reverse action occurs. This change is not instantaneous, but occurs over a period of time. *Cont*



Therefore, as night approaches, the color response in trout diminishes until at night a trout has no color response at all. Under these conditions, black and white is likely to be the most effective combination. Tinsel may have some value if the moonlight is significant.

### **Conclusions:**

1. Trout do indeed have color vision, but it is limited to relatively clear, shallow, water and short distances, so at close range, the trout can see the full detail of color.
2. Trout can discern differences in shades with the highest in blue, then red and then green shades.
3. The color red appears brighter than it does to humans, but quickly becomes black at greater distance.
4. The ability to detect color is greatly impaired and completely eliminated within 12 feet.
5. Impurities in the water or stained water makes colors less significant, but under these conditions, white will remain the best.
6. In the low light conditions of dawn or dusk, trout cannot distinguish color. Black, then, becomes the most visible.
7. In clear water, fluorescent colors are more visible with red, orange and yellow being the most visible. In deeper waters, fluorescent yellow and green stand out the most. However, in stained water fluorescent is useless.

### **Tips to create and select flies:**

Trout will closely examine a slow moving fly like an emerger or nymph, and as we have seen, trout are very sensitive to colors. This is a strong feature in selecting fly dressing such as ribbing. At a greater depth of water, a fluorescent or shiny rib will have a significant effect. On the other hand, insects sometimes carry a bubble which would have high visual impact. Its visibility is not due to color but to a difference in optical density between water and gas. This difference can be imitated by transparent pearly white mylar ribbon. :cont

A dry fly is seen by trout as a footprint in the surface tension and color is not as important as it is with a submerged fly like an emerger. In dry flies, translucent color is much more likely to be visible from below than an opaque mass of color. Therefore, a tightly wound body of a fly will be less effective than a loose winding of feathers or dubbed wool.

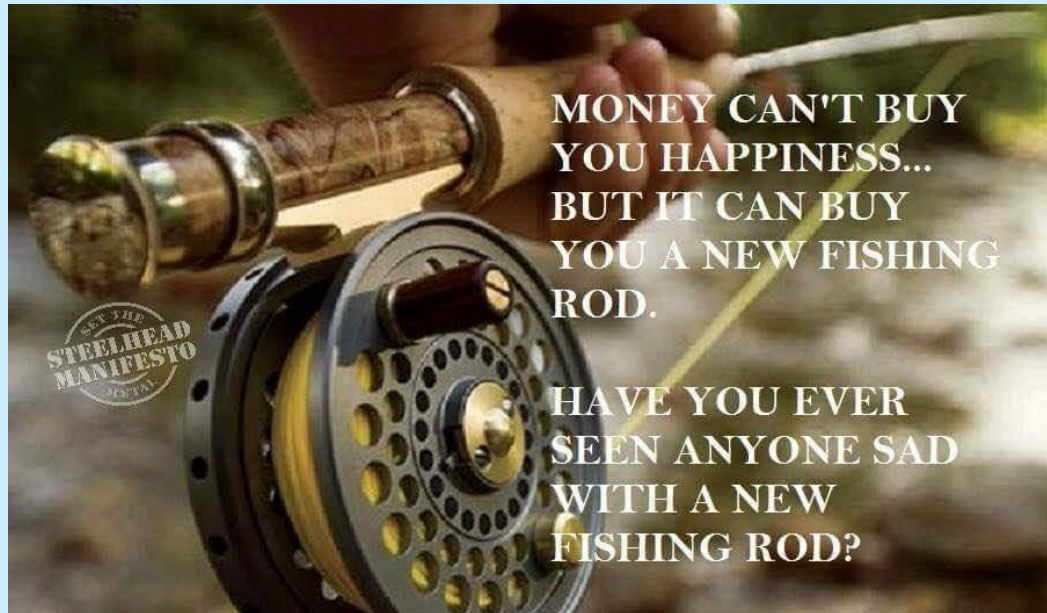
Assignments:

Review your fly tying efforts and make slight adjustments to your technique and examine your fly box considering the priority of the flies. Some may surprise you by being more effective or less effective than you previously imagined..

Extra Credit:

Read the book "The New Scientific Angling - Trout and Ultraviolet Vision " available from Amazon Books by Reed F. Curry.

**NOTE:** Much of the material in this lesson was provided by John Bernard Sunderland of Ytyefly Flies located in Yorkshire, UK. Please refer to this site for more in depth and valuable information. thanks to John!



## How to improve your Dry fly fishing

Fly fishermen tend to subject themselves to the most self-imposed mental angst over things that they have little to no control over. The weather, water flows, travel plans and the number of other anglers on the water are just a few of the insipid factors that torment many anglers. Days, and even weeks, before they might be hitting a specific piece of water the obsessing begins. As overwhelming as these integral components that comprise a day of fishing can be to those who choose to cast a fly, the one I have found that causes the most consternation is whether there is going to be a bug hatch. As fly anglers our most vivid trout fishing memories aren't usually comprised of visions of strike indicators going down or the tug on a streamer. It isn't that these two techniques don't work, au contraire mon frère, they are the two ways that have enabled 90% of all fish pictures to exist.



But it is the days of fish slashing at giant Salmon flies or crushing Hexagenias as the sunsets or the subtle, finicky sipping of tiny caddis on the inside edge of an eddy that are the dreams of fishermen. They also make the most lasting memories for most of us. I can still tell you the best 10 dry fly fishing days of my life, ranked and in order. This isn't unusual for the anglers who wait patiently to use venerated rod and reel combinations for the 20% window of time when trout feed on the water's surface. They revere their dry fly rods like Excalibur. The adoration of these mystical fishing talismans by their owners goes so deep that many choose to keep their prized dry fly rod over their wedding rings if they had to make a choice.

The problem is with the mystique of dry fly fishing is that it is more difficult than what a generation of fly fishermen to believe. There is actual science and proper technique involved in making those special days when "It" happens successful. Here are several hints and techniques, I am sure I have left out a few, that will make those rare special days even more of a success for you. *Cont*

## Hints, Techniques and Cuss Words That You Already Know To Catch More Fish On Dry Flies

**Watch and Wait** – Spend some time when you first get to the stream or lake observing what is going on. Often I sit for a long, long time before I even tie on a fly if I am expecting to fish on the surface. Some of the things that I look for are spent shucks in the water, dead spinners, what the birds are doing(are they low to the water, are there any at all etc), the type of rises or if there are any at all. Water temperature is something else to note. In the end, a few minutes watching the world go by will save you time in the end when the hatch happens.



**Softer is Better** – Today’s rod manufacturers are making more faster action rods than ever before. There are very few rods that are great dry fly rods that land the fly delicately on the water with precision. Slower rods are also much more forgiving when fishing the lighter tippet you need to hook wary trout. They also allow for a strong, quick hook sets that fast rods tend to snap tippet. Since your line is floating and you aren’t probably casting a mile there is no need for a stiff rod to initiate a cast. I would suggest slow action rods like the Winston BIIx and any of the revered Sage Light Line series among others.

- **Go Down One** – The fish are feeding relentlessly. There are bugs all over the place. You have matched the hatch exactly the color, size and pattern are more realistic than the real thing. Twenty minutes later not a take or even a refusal, a trout has nosed your fly out of the way to eat a natural. You are mumbling words to yourself that will keep you out of Heaven when you die. Save yourself from this frustration by starting out using a fly that is one size smaller than you think you should. This works 9 out of 10 times for me. This works because the natural’s entire silhouette is seldom seen by the trout, particularly mayflies.

*Cont*

- **Don't Get Twisted** – Casting dries inevitably causes your leader to twist, particularly large flies. Once your leader is twisted presentation becomes an issue. If I am using a Mayfly I usually cut the wings off of the fly or if it is one I tied I don't put wings on them at all. I have noticed no difference in my success rate since I started doing this. Hair winged flies like large Stone flies and big Caddis I try to get or tie ones that the wing lies as close to the body of the fly as possible. This makes them spin less in the air and is a more realistic representation of the natural usually.
- **Give Your Fly A Haircut** – This is particularly important on spring creeks, back eddies and Stillwater. **TRIM YOUR HACKLES!!** Trim the hackle flat along the bottom of the fly so it sits low and **FLAT** on the water's surface. This lets the fly float like a natural, giving it a much more realistic look from below. Pardon the capital letters but this is an important one.
- **"I Can't See My Fly"** – Guides hate hearing this one. It drove me nuts for years. This is where a little casting practice goes a long way. Get to where you can cast your fly accurately enough that you know where it lands. Then focus on a five foot circle where you presumably know where your fly is and if you see anything that looks fishy set the hook. Parachute flies will also be helpful, but don't be tempted by flies with red or yellow parachutes, these are for anglers, not fish. Fish see colors well and the glow of red or yellow isn't something that they are accustomed to.
- **Plan Your Attack** – I have seen more fish put down than Fort Knox has gold bars by poorly executed attempts on feeding fish. **BEFORE YOU CAST!** Think about where you want your fly to land and how to get it there. Preplanning for wind and pesky obstacles makes a huge difference for success. Watch seams and currents if you are fishing moving water, think about the mends you will need go make to keep the fly in the feeding zone.
- **Know Your Strip** – Gauging distance properly toward the targeted fish is great. It isn't so great if you have no idea how much fly line you have pulled off of your reel. Knowing how much line you pull off your reel with each strip lets you keep your eye on the fish without looking and prevents you from lining the fish. My huge pet peeve is when my friends do several casts to determine range. It never fails, they either flail the water near their target on accident or they snap the fly off because they are afraid of slapping the water next to the fish.

**Fish Don't Have Eyes On The Back Of Their Heads** – This goes with Plan Your Attack but is so important it got its own slot. If you are fishing moving water, try to get behind the trout or at least no more than 70° from the side. A guy in waders waving his arm in the air in a fish's vision is same as a bear charging a human-natural reaction, "Run!" (please don't do this if you ever see a bear, it will chase you). If the trout doesn't see you your *Cont*





- Clear water demands the right fly and excellent presentation chances go up astronomically. Your drift is also much better and it is much easier to get a natural drift. Mending from upstream is almost impossible.
- **Go Light** – Use the lightest tippet you are comfortable with. I saved this for last because it is the most obvious thing ever. I have to state the obvious at least once an article and I wanted you to read all of it. You made it this far so my ploy was a success.

## **Be Patient With Yourself!**

As exciting and satisfying as it is to see the fish eat your fly, it is just as difficult to get the fish to eat your dry fly. Dry fly fishing is a difficult proposition when all of the stars align, which isn't often, let alone under normal circumstances. Practice and time on the water are the two greatest factors in increasing your success. Fishing with a friend and talking about, or better yet, watching him fish will give you great ideas of what to do or what not to do. But most of all don't get down when you can't get the trout to take your fly or you put one down. There are always more fish and the world isn't going to end. The satisfaction of solving the problem, which is the successful outcome of fishing a dry fly, will come more and more often when the opportunity presents itself.



Here are a couple of picture's from a few years ago.GUESS WHO they Are.. ??



So where is this spot.????



What we are waiting for.....



Grumpy old fisherman belowe because gear wasn't ready ...



## *Example summary for regulations book 2017-18*

### **CODE OF PRACTICE**

Fish and Game New Zealand actively promotes responsible and ethical freshwater fishing practices. As licenced freshwater anglers we have the following responsibilities when fishing, as detailed in the National Code of Practice:

- **TREAT FISH HUMANELY**

- **Quickly and correctly return any fish to be released**
  - Minimise air exposure, keep mouth and gills submerged at all times
  - Eliminate contact with dry surfaces
  - Reduce angling duration and handling
- **Quickly and humanely kill any fish to be kept for consumption**
- **Value our fish and respect the food and recreational resource they provide**

- **PROTECT OUR FISHERIES**

- **Understand and observe all fishing regulations and licensing requirements**
- **Support enhancement and management activities**
- **Take no more than our immediate needs**

- **CARE FOR THE ENVIRONMENT**

- **Remove all rubbish and prevent pollution**
- **Prevent the spread of freshwater pests**
- **Use established tracks and roads**

- **RESPECT THE RIGHTS OF OTHERS**

- **Be considerate of other anglers**
- **Respect private property and always ask for access permission**
- **Be aware of our safety and the safety of others when fishing**

**Just a thought 7 weeks.....**

**So wonder how many of the members have cleaned all their gear & checked it ??**

**Have taken your Fly Line off the reel to see if any cracks in it !  
How about the loop where you put the leader on. Is the backing ok ? not gone mouldy or rotten.**

**Wash fly line if all this is OK.**

**Rod Rings OK?**

**Waders fixed any pin holes - leaks**

**Laces on wading boots !**

**Fly's rusty 1's what needs to be replaced or tied.**

**Leader? Mono, Fluro.**

**Vest: clean, removed all the junk from last season.**

**Get new licence .....**

**All these things should have been done by now, but just think what happens if it doesn't get done.**

**Head out opening day, put gear to gear up, Grrrr not enough tippet, grrr. Fly you want not there, loop on fly line stuffed.**

**That is going to spoil a day that you have been waiting for ,**

**for MONTHS.. Don't want slack lines.... You want TIGHT LINES**



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