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27/07/2007 01:27 PM

To "Moore, Anthony - BRS" <Anthony.Moore@brs.gov.au>  
cc "McNee, Alex - BRS" <Alex.McNee@brs.gov.au>,  
Mark.Kinnear@health.gov.au,  
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bcc

Subject RE: meaningful numbers for Danio biology  
[SEC=UNCLASSIFIED]

**UNCLASSIFIED**

Hi Andy,

many thanks for those very useful comments. It gives us a much better idea of some of the parameters we should be thinking about. We are trying to obtain some meaningful data in a comparison between the three GM lines, a naturally occurring golden line and the wt. The problem is that we don't know how different each GM line may be so guesstimating numbers is a bit tricky. Your comment about variance is directly relevant to this. We are primarily interested in captive populations. As far as we know there are no wild populations of Danio in Australia. We are primarily interested in life history traits and establishing how similar the GM lines are to the golden line and wt. I really appreciate your prompt response!

cheers  
Robyn

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27/07/2007 10:27 AM

To "McNee, Alex - BRS" <Alex.McNee@brs.gov.au>,  
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Hi Robyn and Alex

My comments are only really general and you probably already know this stuff. The number of individuals required to estimate any particular trait is likely to vary considerably and will be a function of the variability of that trait. The number will also depend on the amount of type 1 and type 2 error you are willing to accept, which will invariably be related to what the consequences are of being incorrect and the resources available. Much of fisheries science is plagued by using too few individuals and having no estimate of error. Often with the explanation that we used 20 fish because that is all we could get, which is fine, as long as you realise the limitations of the sample and don't go on to make a type 2 error by rejecting the null hypothesis when it is actually correct.

Therefore, the best approach would be to do a rough pilot where you measure the variance of each trait in a small sample and use those data to estimate the relative variance, which could then be used to calculate