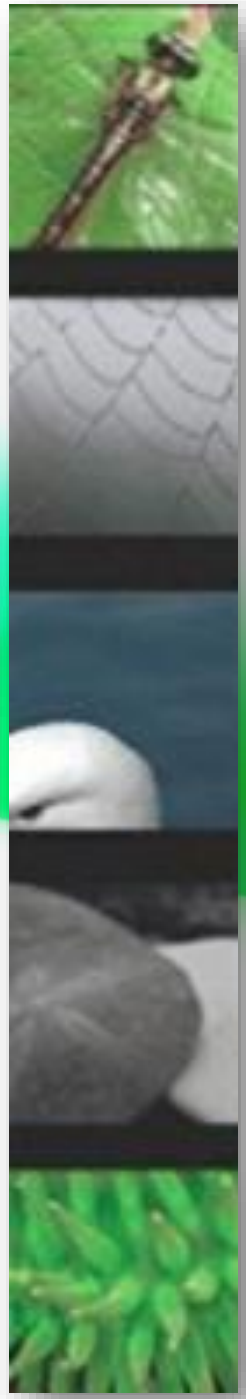

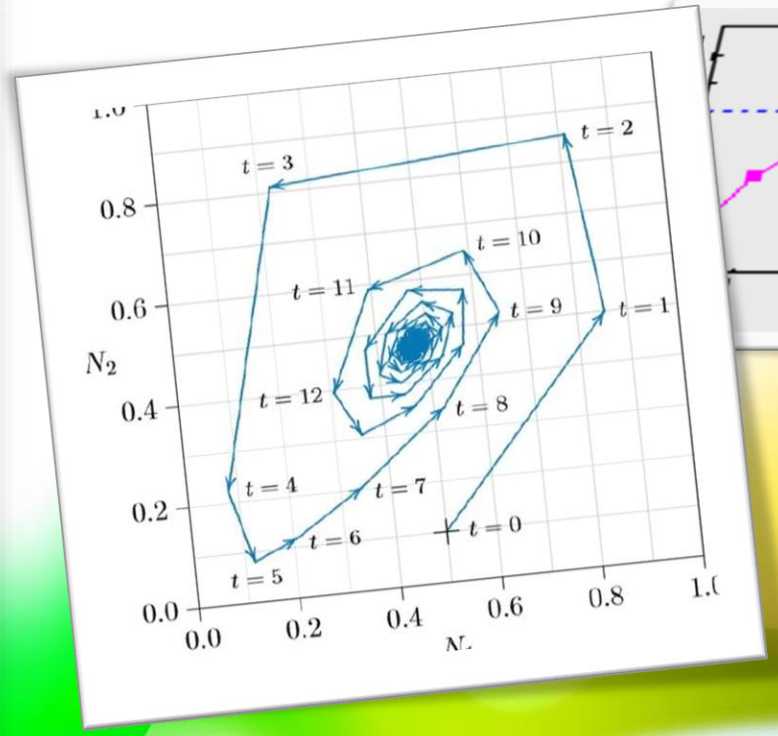

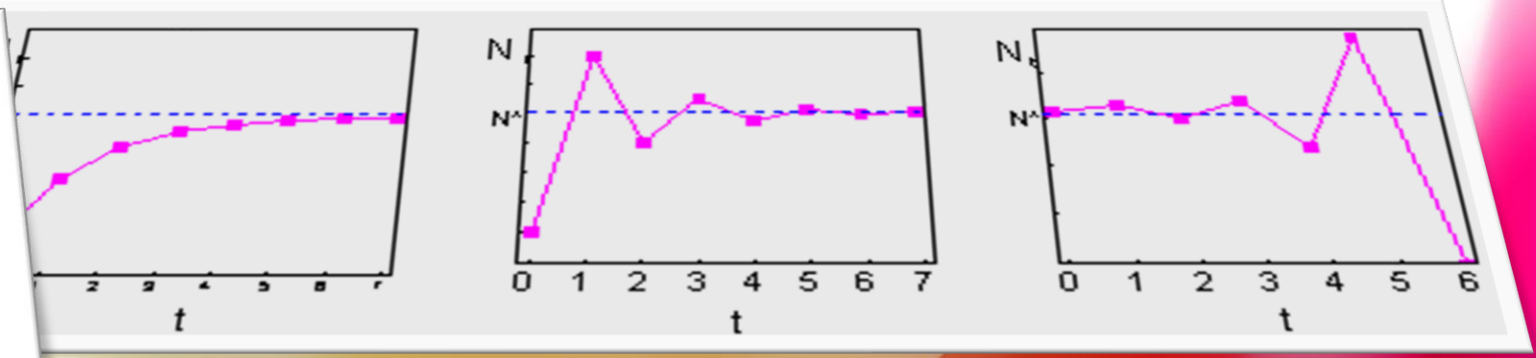

Mathematical Models in Ecology

Lecture 04

Take Home Activity

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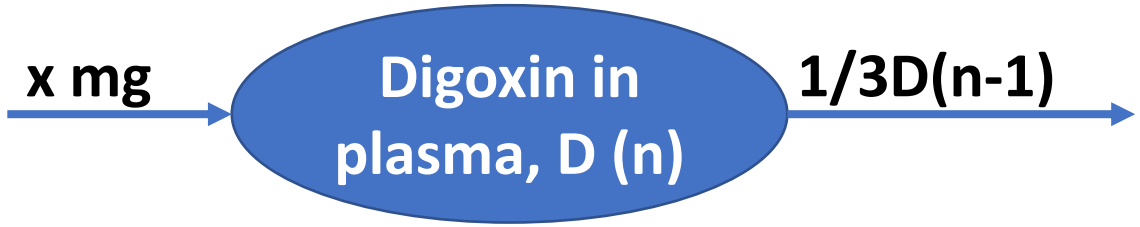
Extra Question on Digoxin Problem

Suppose the patient does not get the desired benefits from taking 1mg of digoxin per day. The doctor decides that the proper target goal is 5mg of digoxin in the blood. The doctor also wants the digoxin 14 days .

Solution



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$$D(14) = \left(\frac{2}{3}\right)^{14} x + \left(\frac{2}{3}\right)^{13} x + \ldots + \frac{2}{3}x + x$$

$$D(14) \approx 2.99x$$

Take Home Activity: Fill the following blanks below ! ☺

Size of Dose x(mg)	1.0	1.5	2.0	1.8	1.6	1.7
$D(14)$	2.99					

From this table we can see that dosage of ..... mg gives $D(14) \approx$ ..... , which is within the acceptable range.