What does the Shannon-Wiener index measure?

e) Species diversity

The 25 July 2020 Assigned news article 'Island Nature Trust takes 'softer' approach to dune preservation' (CBC) described the Prince Edward Island Government's efforts to stabilize the Province's iconic sand dunes, especially near their even-more-iconic golf courses. What was the 'softer' ecological method described in these dune stabilizations?

d) Transplanting marram grass inside and along the front of the dunes

What is the structure of the lognormal distribution?

~~c) Number of species versus log2 area~~

e) Number of species versus log2 number of individuals

In what way does secondary succession differ from primary succession?

d) Secondary succession occurs where organic matter remains after a disturbance, rather than on new substrates

What is the usual relationship between environmental heterogeneity and species diversity?

b) High environmental heterogeneity leads to high species diversity

Which of the following trophic levels is often overlooked in food webs?

a) Decomposers

What experimental manipulation (treatment) can you use to test for bottom-up control of community structure?

a) Add food

Which of the following is NOT a characteristic of fishers?

b) Promotes equilibrium

The calculated value for the Shannon-Wiener Index is 0 for a community with one species, and the Index increases as species richness _____ and species evenness _____.

d) Increases, increases

In the Assigned Primary Literature article 'Controlling invasive plant species in ecological restoration: a global review', authors Weidlich et al. (2020) reviewed 300+ primary literature articles from throughout the world on the control of undesirable plants (both exotic invasive and overabundant native plant species). Overall, what was the most common control method in more economically-developed countries (like Canada)?

~~a) Mowing/cutting~~
e) None of the above

Which of the following is correct regarding the intermediate disturbance hypothesis?

c) Species diversity will be highest at intermediate levels of disturbance

How did Clive Jones and colleagues (1998) test for top-down control of community structure?

c) They removed mice, and measured the response in the moth population

Which of the following is considered the first trophic level in a food web?
d) Primary producer

In the Assigned Primary Literature article 'Generic assembly patterns in complex ecological communities', authors Barbier et al. (2020) explicitly based their simulations on a core conceptual model that was introduced and discussed in our BIOL2060DE content/etext. What was that conceptual model?

~~b) Functional response curves~~
~~e) Trophic cascade relationships~~
d) Lotka-Volterra population modelling

What shape is a complete lognormal distribution?

a) Bell-shaped

What is the structure of a species-area curve?

b) Species richness versus area sampled

For which level of biological organization can you draw a species-area curve?

a) Communities

What is the term for the number of species in a community?

e) Richness

Which of the following concepts does not belong with the others?

b) Weak trophic interactions

In the Assigned Primary Literature article 'Generic assembly patterns in complex ecological communities', authors Barbier et al. (2020) provided an example of how sophisticated mathematical modelling is applied to understanding ecological complexities at the community level. Most of this article exceeded the capability of a naive second-year ecology student (Crawford didn't understand much more), but the authors' general conclusion from their study was simple and clear. What was their general conclusion?

~~c) Across the range of alternate computer models tested, the models with fewest parameters always performed better, even when penalized for complexity~~

d) It is possible to to tackle the staggering complexity of ecological systems without relying on empirically unavailable details of their structure

In the Assigned Primary Literature article 'Fisheries restoration potential: optimizing fisheries profits while maintaining food web structure', authors Bieg & McCann (2020) focussed on a major ecological/economic dilemma regarding global fisheries in the future. What was that dilemma?

b) Do we aim to restore fisheries ecosystems at the expense of not maximizing total fish biomass harvests?

How did Clive Jones and colleagues (1998) test for bottom-up control of community structure?

b) They added acorns, and measured the response in the mice, deer, and tick populations

In the Assigned Primary Literature article 'Controlling invasive plant species in ecological restoration: a global review', authors Weidlich et al. (2020) reviewed 300+ primary literature articles from throughout the world on the control of undesirable plants (both exotic invasive and overabundant native plant species). Globally, what did they find to be the most-studied invasive plant types?

~~d)~~

~~b and c (grasses and forbs)~~

Which of the following describes a predatory species which has low abundance but a large effect on the community?

c) Keystone species

What were the results of Robert Paine's (1966, 1969) experiments in which he removed starfish from the intertidal zone, and measured the response in the intertidal community?

b) ~~After a brief explosion in benthic green algae and snails, the entire intertidal community collapsed to one species - brown algae~~

c) The richness of intertidal invertebrates in the control plot remained constant (15 species), while the richness in the experimental plot declined (from 15 to 8 species)

In most communities, are most species rare, moderately abundant, or very abundant?

a) In most communities most species are moderately abundant

Which of the following best describes 'initial floristics' as a model of succession?

b) Most species are always present in the community and change in abundance over time

The 5 May 2020 Assigned news article 'No, Americans do not need to panic about ‘Murder Hornets’' (Smithsonian Magazine), reported that of the six confirmed sighting of the Asian Giant Hornet (*Vespa mandarinia*) in North America to date, all but one of the instances were isolated individuals. There was however, a nest discovered and destroyed. Where was that nest?

a) Vancouver Island, British Columbia

In the Assigned Primary Literature article 'Fisheries restoration potential: optimizing fisheries profits while maintaining food web structure', authors Bieg & McCann (2020) reviewed general rules of ecological theory that describe a food web’s potential for a particular ecological phenomenon - one that they tied to fisheries productivity and profit. This particular ecological phenomenon was featured prominently in our BIOL2060DE content/etext. What was it?

b) Trophic cascade

What is the term used to describe a top-down indirect effect, in which non-herbivore consumers control primary production?

b) Trophic cascade

The 25 August 2020 Assigned news article "The aliens to watch': how the humble earthworm is altering the Arctic' (Guardian) described the ecological changes that this exotic species has triggered in the North American Arctic, since its introduction to all of North America by European colonists over the past 400 years. Specifically, what cause-effect ecological mechanisms were identified in the news article?

~~b) Worms directly unlock nitrogen in the soil, which was previously constraining plant growth~~

~~d) a and b~~

e) b and c

What does a rank-abundance curve with a lower slope and greater length mean?

~~a) A higher species evenness~~

e) Both a and b

Pioneer species modify the environment in such a way that it becomes less suitable for themselves and more suitable for later successional species. What is this mechanism of succession called?

a) Facilitation

What is the term for a series of communities or ecosystems representing a range of ages or times since disturbance?

Which of the following life history traits would be advantageous for pioneer species?

d) Both a and c

In general, what type of effect does the degree of physical structure of a plant community have on the diversity of the animal community?

~~c) Neutral~~

b) Negative

Which of the following is an example of an environment where primary succession would take place?

c) A bare volcanic surface

Which of the following would be considered a disturbance?

~~d) Both a and c~~

~~b) Hurricane~~

e) Both a and b

What does a rank-abundance curve with a lower slope and greater length mean?

e) Both a and b

What is the term used to describe the abundance of prey populations at lower trophic levels being regulated by the abundance of predator populations at higher trophic levels?

c) Top-down control