

FT 272 Exam 2

1) Fishery management draws on fisheries science, political sway, and cooperate investment, in order to find ways to exploit fishery resources

- a. True
- *b. False

2) Distant-management, cooperate fish traps, high seas Japanese harvests, and Industrial development in Atlantic and Pacific are examples of

- *a. The need for fishery management
- b. The economic climate at the turn of the century
- c. Constitutional shortcomings of the Pacific Salmon Treaty
- d. The reason Cod stocks in the Atlantic crashed
- e. None of the above

3) Management of fisheries varies widely for all of the following reasons EXCEPT

- *a. Industrial needs
- b. Ecological considerations
- c. Fishery economics
- d. Historical fishing practices
- e. Government structure
- f. Fisheries data
- g. None of the above

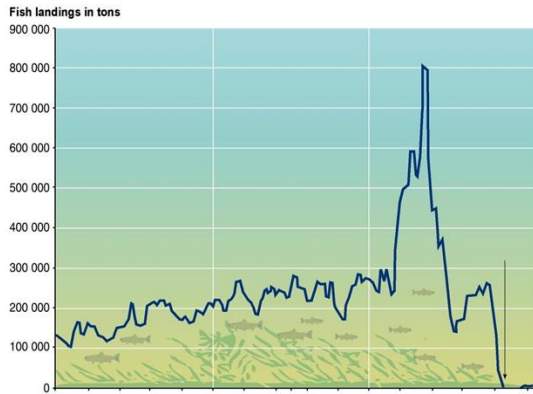
4) Fishery management is like mathematics, it is a static field where guiding principles remain firm through the test of time.

- a. True
- *b. False



5) The Atlantic Cod fishery can be characterized as:

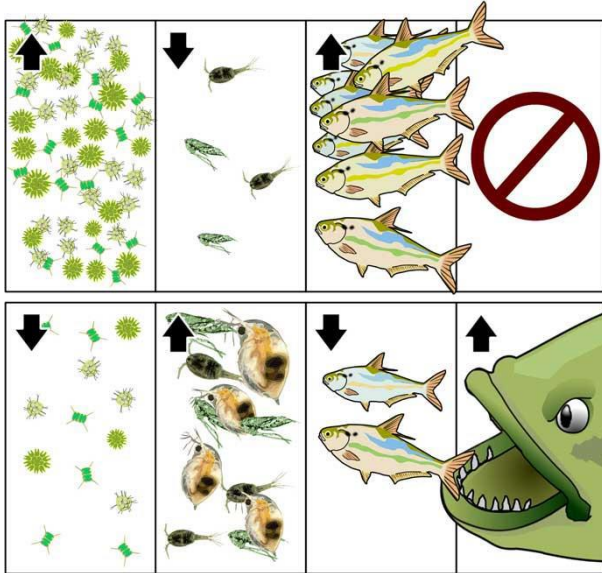
- *a. The most influential fishery ever
- b. A pelagic fishery for bait species
- c. Less important than the Haddock fishery in the Atlantic
- d. A seine fishery that collapsed in the 60's
- e. None of the above



- 6)
 The Atlantic Cod stock was considered collapsed in
 a. 1500's
 b. 1960's
 *c. 1992
 d. 2012
 e. None of the above



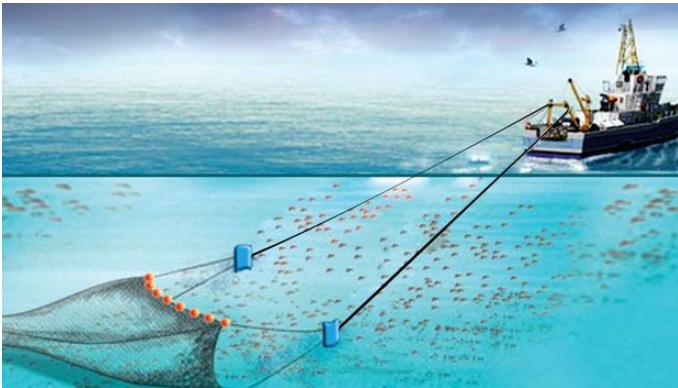
- 7)
 Atlantic Cod were known to be over 20 years old, reach lengths of over 3 feet, and be capable of producing upwards of 9 million eggs
 *a. True
 b. False



8)

The above picture is an example of _____ caused by the Cod collapse

- a. Fishing up the food chain
- b. Plankton domination
- c. Sardinification
- *d. A Trophic Cascade
- e. None of the above



9)

Scientists point to habitat modification from bottom trawling as being one of the reasons Cod have begun to rebound in the Atlantic

- a. True
- *b. False

10) The consensus is that the future of Atlantic Cod relies on ecosystem based approaches to try and rebuild this collapsed fishery

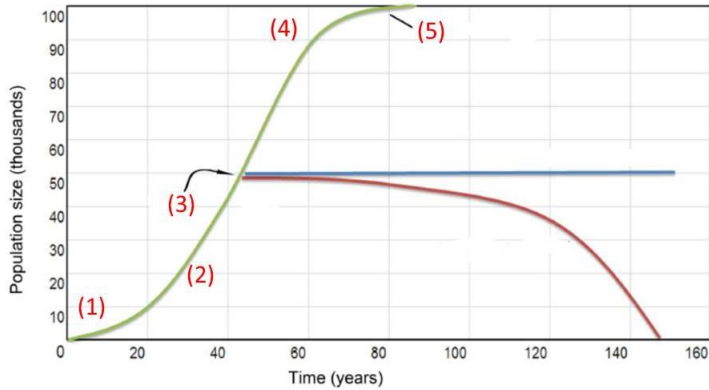
- *a. True
- b. False

Type: MT

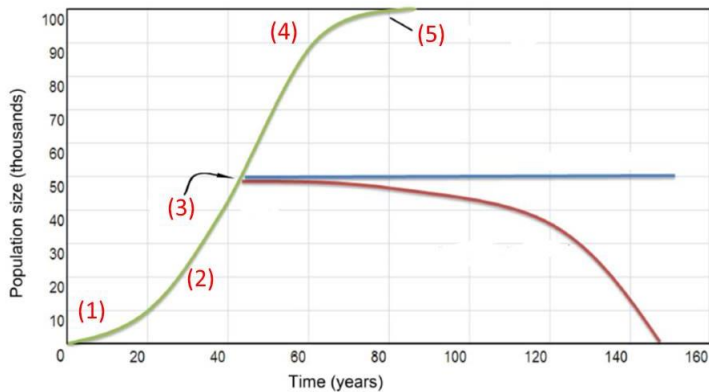
11) Match the following four vocabulary terms with their definitions

- a. Species = A group of fish capable of interbreeding successfully

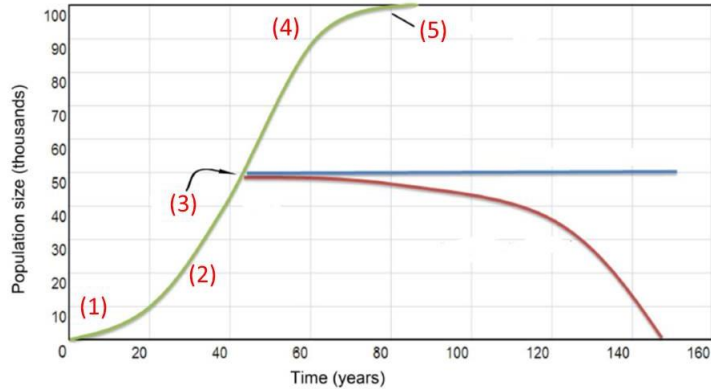
- b. Population = A summation of all the organisms of the same group or species, which live in the same geographical area, and have the capability of interbreeding.
- c. Stock = An interbreeding group of fish that is distinguished by similar genetic, life history, phenotypic, or habitat characteristics and is managed as a unit
- d. Recruitment = The number of fish that are added to the exploitable stock (available for harvest) each year due to either growth or migration of new fish into the area. This rate is variable and highly dependent on ocean conditions, habitat changes, fishing pressure, etc.



- 12)
 On the above figure Identify Carrying Capacity (K)
- a. 1
 - b. 2
 - c. 3
 - d. 4
 - *e. 5



- 13)
 On the figure above Identify Maximum Sustainable Yield (MSY)
- a. 1
 - b. 2
 - *c. 3
 - d. 4
 - e. 5



14)

On the figure above identify a location where there is slow population growth

- *a. 1
- b. 2
- c. 3
- d. 5

15) The following are all good examples of R strategist species EXCEPT

- a. Shrew
- b. Guppies
- *c. Rockfish
- d. Bunny Rabbits
- e. None of the above

16) Maximum Sustainable yield is calculated by

- *a. $1/2K$
- b. $2G$
- c. $1/3$ Carrying Capacity
- d. $n/2$
- e. None of the above

17) The concept of MSY is founded on

- a. The idea that harvested populations perform better
- b. The idea that over-escapement is unhealthy for natural populations
- *c. The idea that fish populations replenish themselves based surplus production
- d. The idea that fish populations will outstrip their resources if left un-harvested
- e. None of the above



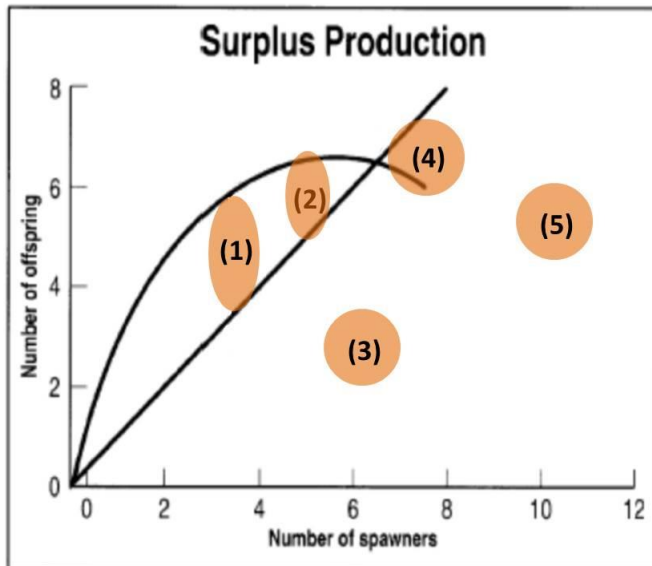
18)

All of the following are examples of challenges associated with managing for MSY EXCEPT

- a. Estimation of population size is expensive
- b. It does not take into account ecosystem effects
- c. There are social pressures to overestimate stock sizes
- *d. It is too conservative of an approach often setting harvest levels too low

19) The following best describes the concept of surplus production

- a. If too many fish are harvested there will be surplus product on the market
- *b. Fish populations have an inherent nature to replenish themselves based on their surplus production
- c. There is always a surplus of fish so some can be taken for production
- d. It removes oldest or largest individuals which are considered surplus since they are close to Carrying capacity
- e. None of the above



20)

In the figure above identify the "Surplus" where the fishery would be targeted

- *a. 1
- b. 2
- c. 3
- d. 4
- e. 5

21) The concept of a Total Allowable Catch (TAC or Quota) is simply a way that a fishery (either managed under MSY or Ecologically Sustainable Yield) is allocated among user groups

- *a. True
- b. False

22) The Exclusive Economic Zone or EEZ came out of which piece of important fisheries legislation

- *a. United Nations Convention on the Law of the Sea UNCLOS (1982)
- b. Magnuson-Stevenson Fishery Conservation and Management Act (1976)
- c. Sustainable Fisheries Act (1996)
- d. National Environmental Policy Act (1970)
- e. Endangered Species Act (1973)
- f. Marine Mammal Protection Act (1972)

Type: MA

23) Identify **TWO** examples of places where Fisheries Closures were implemented to try and conserve depleted stocks

- a. Pacific Halibut
- *b. Georges Bank Cod
- *c. Georges Bank Scallop
- d. Aleutian Walleye Pollock

24) The primary purpose of placing gear restrictions on fisheries is to

- a. Decrease fishery escapement
- b. Increase the safety of the fishing activities
- *c. Decrease fishery catch
- d. Allow smaller scale fishers to enter the fishery
- e. None of the above

25) In a situation where managers don't have as much information as they would like to manage a fishery, all of the following are possible reasons EXCEPT

- a. The data is too expensive to collect
- b. the data is too time intensive to collect
- *c. The data is already used in another stock
- d. The species is elusive and cannot be studied well
- e. None of the above

26) When describing the health, condition, and abundance of a fishery stock one is describing

- *a. A fisheries assessment
- b. Carrying capacity
- c. Maximum sustainable yield
- d. An index
- e. None of the above

27) An indirect shortcut derived from and pointing into, a greater volume of values, data, information or knowledge is

- a. A population
- b. A census

- *c. An index
- d. Survival
- e. None of the above

28) The techniques used for estimating fish populations varies based on all of the following EXCEPT

- a. Species
- b. Habitat
- c. Life history
- d. Life stage
- *e. Sex

Type: MA

29) Identify two of the following species that a population estimate could be conducted using longline gear

- a. Walleye Pollock
- *b. Sablefish
- *c. Halibut
- d. Chinook Salmon
- e. None of the above

30) Expensive, More systematic/Scientific, Repeatable and comparable, Allows for more biological information to be collected are all characteristics of which kind of fishery data collection method

- a. Fishery dependent
- *b. Fishery Independent

31) As a fishery manager you see a change from a low to a high Catch Per Unit Effort (CPUE). This could likely indicate

- a. Fishery stocks are declining
- *b. Fishery stocks are rebounding
- c. Fishing pressure is increasing
- d. The fishery is likely to collapse

32) Biological information is typically collected during fishery assessments but doesn't necessarily serve as an indicator of stock health

- a. True
- *b. False

33) Estimation of salmon escapement is typically done with fish tickets and e-landing reports

- a. True
- *b. False

34)



Estimating the age composition of a fishery stock is typically done using fish scales, fish otoliths, fish spines, and even bivalve shells. These structures are used because they share this in common

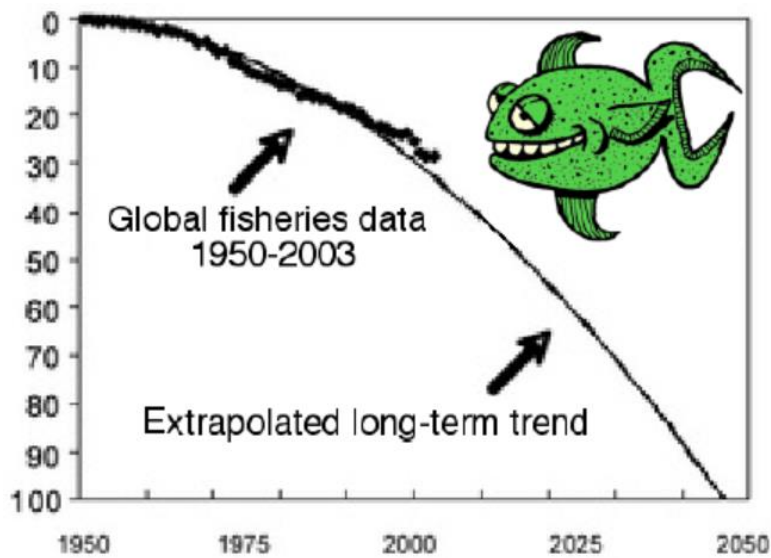
- a. They lay down concentric growth rings like trees
- b. They grow faster in summer than winter
- c. They grow faster in salt water than in fresh water
- *d. All of the above
- e. None of the above

35) Based on what you know about ageing of fish which of the following species would be the most difficult to get age composition information on

- *a. Sea Cucumber
- b. Yelloweye Rockfish
- c. Geoduck Clam
- d. Chinook Salmon
- e. Sleeper Shark

36) When considering the interconnectedness of all components within an ecosystem, including fish, plants, marine mammals, climate, and humans, we are managing using_____.

- a. Environmentally Sustainable Yield (ESY)
- *b. Ecosystem based management
- c. Establishment of marine reserves
- d. Maximum Sustainable Yield (MSY)
- e. None of the above



37)

The above figure is a graph representing

- a. Projected bycatch quotas in global fisheries
- b. Percentage of global fisheries managed in catch share programs
- *c. Number of global fisheries that have collapsed
- d. Global fisheries production from aquaculture
- e. None of the above



38)

All of the following are ways in which we can take an ecosystem perspective on fisheries management EXCEPT

- a. Reduce bycatch
- b. Marine reserves
- c. Monitoring of population characteristics
- d. Catch share programs
- e. Ecologically sustainable yield
- *f. All of the above are ways in which we can take an ecosystem perspective
- g. None of the above

39) All of the following are methods of bycatch reduction EXCEPT

- a. Backdown Seining
- *b. Shackle locking devices
- c. Fishery closures
- d. Medina panels
- e. Hydroscoop dredge

40) Marine reserves are an important tool in fisheries management because they provide a refuge where typically biomass, density, and diversity of fish species decreases

- a. True
- *b. False

Type: MA

41) Catch share programs or Quota programs promote better management because they improve safety, reduce bycatch, improve product quality and make for more predictable management. Select two concerns with Quota Programs

- *a. Unfair allocation
- b. Reduced fishing time
- *c. Privatization of a public resource
- d. Exclusion of largest commercial operators
- e. Implementation of dock share programs

42) All of the following are true of managing for Ecologically Sustainable Yield (ESY) EXCEPT

- a. It takes into account more than a single species when establishing harvest levels
- b. Allows a sustainable harvest that does not shift the marine ecosystem to an undesirable state
- c. Requires long-term monitoring of all trophic levels
- d. Requires more complete knowledge of the biology of individual species
- *e. All of the above are true of managing for Ecologically Sustainable Yield

f. None of the above

Type: SA

43) Market based solutions are sometimes used to aid in fisheries management. Identify one market based solution and briefly describe it (2 Points).

Type: SA

44) In your own words describe the role of a fishery Assessment (2 Points)

Type: SA

45) The Future of fisheries management is based around _____ approaches