

Trout 'spy' at Penn State reveals surprises

UNIVERSITY PARK — Fishermen get many surprises in discussing trout with Robert A. "Bob" Bachman of Penn State. Bachman set a world record in studying brown trout for three fishing seasons from camouflaged "blinds" on Spruce Creek in Huntingdon County.

First, he noticed that wild brown trout use a "sit and wait" feeding strategy over 86 percent of the time. Second, he observed that over 95 percent of the wild brown trout in Spruce Creek feed in sites without overhead cover during nearly all daylight hours. And third, he noticed that wild brown trout feed more than hatchery-reared trout and move around less than hatchery trout in the same stream.

Bachman studied over 100 wild brown trout intensively from April through November for three consecutive years. He recorded peak feeding rates of 200 to 300 times per hour frequently between noon and 2 p.m. in bright sunlight during July and August. The "sit and wait" feeding strategy consists of choosing a place to intercept food drifting along the stream where the trout can see well and conserve energy at the same time.

He is convinced that feeding site quality is also the key to determining the number of trout in a stream and how fast they grow. This discovery questions the validity of the theory that overhead cover decides the number of trout in a stream.

He claims the speed of a trout's growth, and how big it gets, depends on the difference between the energy gained from food and the energy spent in catching it. He noticed that hatchery trout, brought into the research site, used up more energy than they gained — mostly due to wasted movements. Thus, they didn't survive well in the wild.

Bachman carried out his studies

while associated with the Cooperative Fish and Wildlife Research Unit at Penn State. In so doing, he completed requirements for the doctor of philosophy degree in ecology.

Location and composition of the Spruce Creek wild trout are surprisingly stable, it was noted. Individual trout return to the exact same sites month after month, year after year. Significant migration occurs only during the fall spawning season. Of 18 trout observed late one summer, 15 returned to the same foraging sites and home ranges the following spring. The next year, 11 of 14 trout returned from the previous fall.

"Behavior of fishermen disturbs wild brown trout in their normal midday feeding," Bachman stated, observing that "in the evening you certainly can get much closer to brown trout without frightening them."

Bachman found that overhead cover is used mostly by fish when danger threatens. At such times, cover is important, he affirmed. Trout will take cover when an

angler makes a clumsy approach, when a woodchuck swims across the stream, or a heron flies over. But in 20 minutes, the trout generally are back to their normal routine.

From his intensive observations, Bachman could predict, within a quarter of an inch, where a trout's head would come to rest after the fish had been feeding. Usually such position would be next to, above, or below a certain rock or submerged object.

Bachman knew the trout in his section of Spruce Creek so well that each one had a number and often a name such as "Old Yellowfin" and "Beethoven." From photographs he could tell how much each trout had grown from year to year.

He watched each fish for 15 minute intervals, punching into a computer called the "Trout Tracker" everything about a particular fish such as fighting, feeding behavior, position changes, and hiding. Each time a trout ate an insect, the time of day and location were recorded. The

observations continued for 10 to 12 straight hours daily.

"Rigid territoriality in the traditional sense was not evident among the wild brown trout in Spruce Creek," Bachman stated. "Instead, we found that the

fish share their time in feeding sites. There is, however, a hierarchy of dominance. If three fish use the same site, the largest one dominates, but all three share the area. And there goes another myth about trout behavior," he added.

Spring can be tough on calves housed indoors

UNIVERSITY PARK — The warm days and cold nights of spring can be tough on youngstock housed in poorly ventilated quarters. Pens and stalls with manure packs in them can become pretty rank on warm spring days.

It doesn't take much increase in temperature to encourage rapid release of ammonia and other gases. It's amazing how foul the air in the old horse barn or chicken coop can get on a spring day when it's full of calves and a manure pack.

Many barns that had adequate air exchange during cold weather

to control moisture become foul during warm spring days. Shelters with poorly placed openings may need to have extra doors and windows opened on warm sunny days and then closed some on frosty nights to prevent drafts at animal level.

Individual calf pens with four solid sides can become particularly offensive on warm muggy days. More regular cleaning and bedding may be necessary.

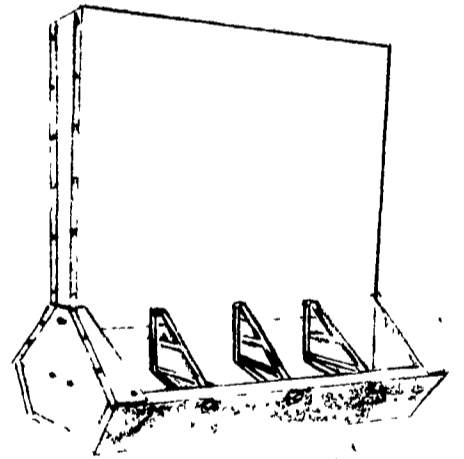
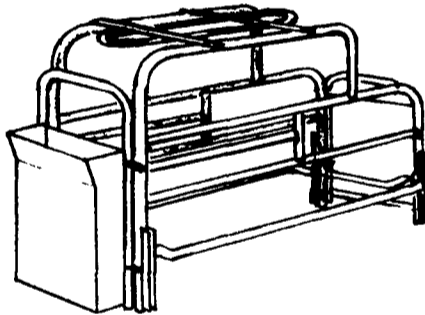
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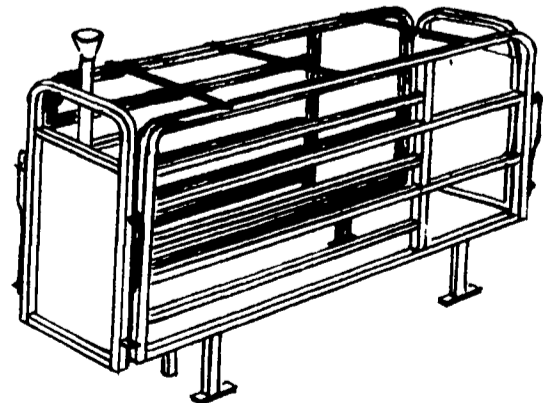
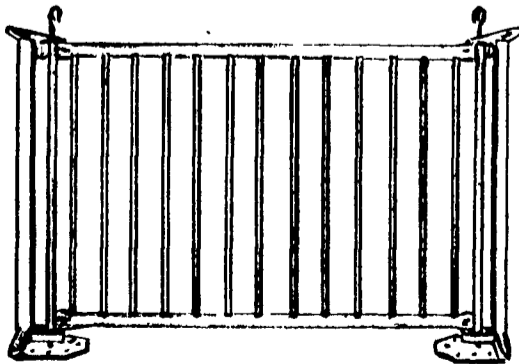
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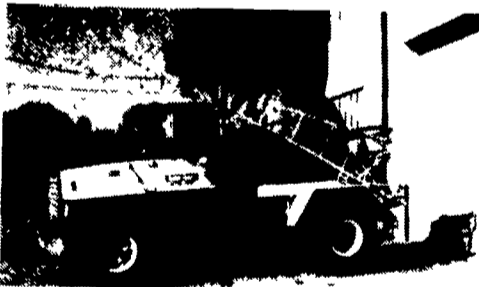
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