Nature Week at Heritage Village - April 19th

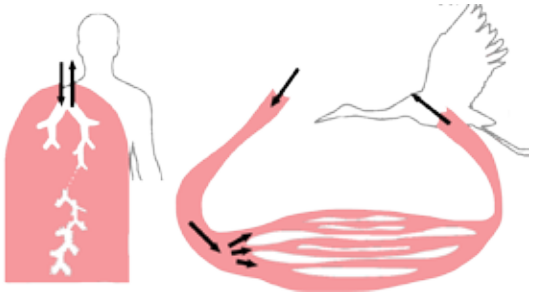
The High Life

The sound is unmistakable. Somewhere nearby are sandhill cranes. I have seen them walking in Heritage Village but in this case there are two flocks circling high overhead. They are tiny and I know the birds are big. Just how far up are they? A Google search reveals that they can fly at an altitude of over 2 miles. Other vertebrate animals do not go that high. It is too cold and there is too little oxygen.

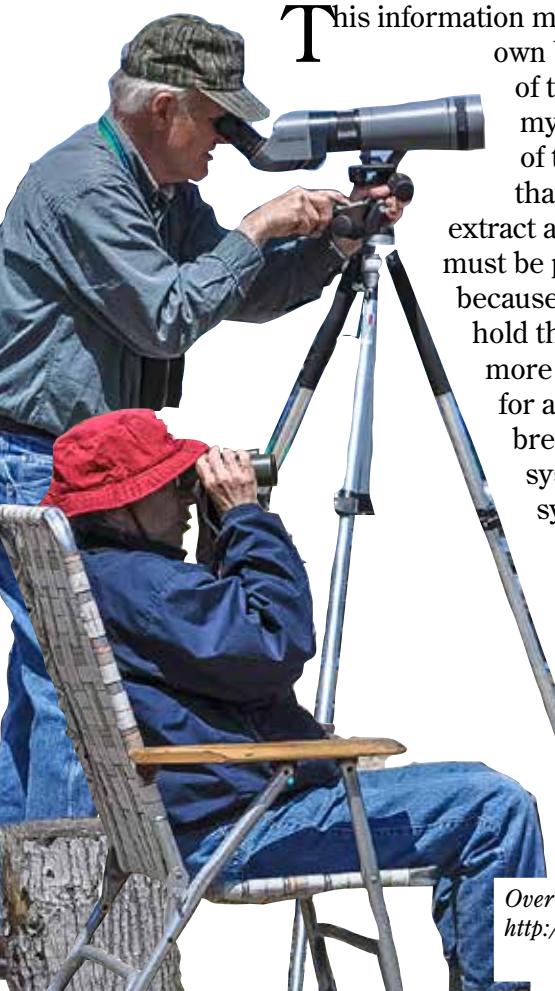
How do they, and the other raptors we have been watching, survive up there? One factor is the evolutionarily unique avian lung. Unlike the bellows type lungs of humans - where the fresh air is sucked in, the oxygen quickly transferred to blood vessels, and the stale air pushed back out - birds use more of a heat exchange type system. The fresh air is sucked in, passes over a long interface of air tubes and blood vessels, and then the stale air continues on out. It is a unidirectional flow system built to be efficient, moving a steady flow of fresh air through the lungs. In humans the stale air often lingers in the lungs, mixes with the incoming fresh air, providing a mixture of lesser average oxygen content.

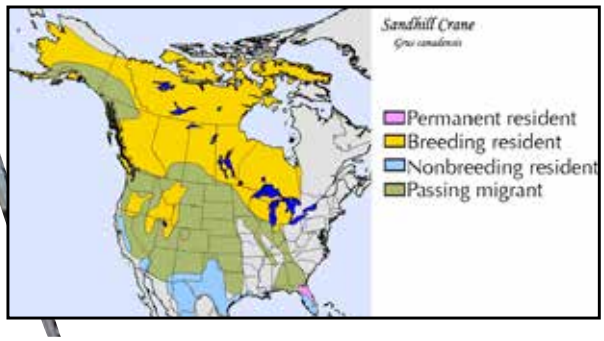
A sandhill crane proportioned against a 6-foot person.

Photo: Howard B. Eskin



This information made me concentrate on my own breathing. I noticed a couple of things: first, a breath of air stays in my lungs an incredibly short period of time, a split second. It is amazing that my system is fast enough to extract any oxygen. Second, my system must be pretty good at the oxygen transfer because when I am "out of breath" I don't hold the air longer to give my system more extraction time, rather I gasp for air trying to make the bi-directional cycle as short as possible and I breathe deeper trying to get more of the stale air out. What a marvelous system we have, only to be outdone by an even better system of a bird.





Over 12,000 birds have been logged at Hawk Watch so far. For an update visit http://hawkcount.org/month_summary.php?rsite=613

MACKINAW NATURE CENTER

by Sandy Planisek 2015

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