

## CLIMATE CHANGE CHRONICLE 24

### Lessons from Migrating Butterflies

As we have noted in these chronicles, we are moving from one era to another. We are leaving the Holocene Era that began 11,000 years ago with the disappearance of the ice fields. We are migrating into the Anthropocene climate changing era. As its name indicates, this is the first man-made era and it began in the middle of the last century. With this new era come fundamental changes to our planet.

What do we have in our history to show us the road ahead into this strange land? Not much. There are no road maps, guide books, or models that can guide us into our future. But we may gain insights from another migration—that of the Monarch butterflies. Each year they migrate from the northern U.S. states and Ontario down to Mexico. But their story begins before for the actual migration.

Towards the end of its life the Monarch caterpillar gorges itself and disintegrates into a pool of goeey protoplasm contained in a pod called a chrysalis. Within the chrysalis a battle royal rages when a few different cells emerge. Scientists call them *imaginal cells* because they contain the “image” of the future butterfly. The cells of the caterpillar’s immune system attack the imaginal cells trying to destroy them. But the imaginal cells are not deterred. They continue to increase and eventually they overwhelm the caterpillar cells and bring forth a new and different life-form. Yay!

Next, the little imaginal cells start vibrating, cluster together, all passing on information to one another. Then, one day, the long string of imaginal cells realizes it is complete. The butterfly breaks free from the chrysalis and grows as it feeds on the milkweed, its only source of food. In time, when it gets too cold for the Monarchs, the migration begins. They rise up in favourable winds and head south, on their 3,000 mile journey across the U.S. They stop in the same resting spots in the same locations they used on the way up. Eventually they land in the same forest nesting sites in Mexico they use year after year.

And here is the amazing thing. These are not the same butterflies that made the initial trip north. They are their grandchildren—the fourth generation of Monarch butterflies that made the initial journey. How did they know what to do?

We can use the story of the Monarch butterfly as an analogy to teach us something about our own migration.

First, the butterflies decide to migrate when the weather becomes too cold for them in the north. We have a similar but different weather situation. Our world with its climate

change is heating up. It is becoming less habitable. It is time to migrate into a more sustainable world.

Second, we have within us imaginal cells. We've been surviving for a long time and have an image of the kind of world we need to survive. Most of all we need a world that will sustain us and other species we depend upon for our survival. We usually think of nature as something "out there", beyond our real control. But if the Anthropocene is man-made we can unmake it and make another world.

Third, the current man-made world with its destructive systems has, like the caterpillar, a very strong immune system. Powerful groups with seemingly unlimited resources will do all in their power to keep things the way they are. We are going to have a difficult and lengthy battle on our hands.

Fourth, as is the case in all migrations we have to travel light. We must take with us only those resources that we need for the journey and which we can adapt and use in the new world we are creating.

Fifth there is the mystery of the migration itself. Unlike other species that learn from their parents about survival, the butterflies depend solely upon a built-in and shared sense of survival. The butterflies migrate as a group. They are dependent upon one another. And so it must be with us.

You may be saying, "But Mike, this is just an analogy. We are not butterflies. We are humans."

*Just because something is analogous does not mean it is not real.* We are a human species migrating from one era to another equipped with our human intelligence and many other resources.

But there is a final reminder of the stakes involved in this journey—the most important lesson of all.

The milkweed plants in the north are being methodically destroyed to "beautify" roadways and turn open fields into houses, shopping malls and other human structures. The Monarch butterflies are now in serious decline and facing possible extinction. They may be coming to the end of their migrations.

Does their plight tell us something about our own situation?

