**Reason for Hosting Program:**

* Requests from Agents
* One of my favorite 4-H Programs
* Fits Perfectly into 4-H

**Importance of Monarch Butterflies**

* monarch butterflies are easily the most recognizable butterfly in the entire world
* first butterfly the youth think of
* Unique migration patterns
* Cultural significance
* Populations are declining

**Identifying Monarchs**

* How to identify a monarch butterfly
* Monarch vs viceroy vs gulf fritillary

Male vs Females:

* Males & females are the same size
* Males have a black spot or scent gland
* Females have thicker veins

**Milkweed & Monarchs**

* what plants do you guys think of when you think of the monarch butterflies.
* milkweed is very important and I can't talk about monarch butterflies without talking about milkweed.
* if you do not have milkweed, you cannot have monarch butterflies. When adult butterflies females lay their eggs, they lay them only on milk weed. Caterpillars only eat milkweed so without milkweed, which you cannot have butterflies so that's kind of where everything starts with the milkweed.

Common Milkweed Species in SC:

* Butterfly Weed – orange
* Common Milkweed
* Swamp Milkweed
* Talk about ways to identify

**Migrations**

* Large animal Migrations – typically long-lived, larger animals
* Most involve a previous generation leading the way or navigating

**Monarch Migration**

* Monarch Migration is on their own
* Explain map spring vs fall migration
* Fall Migration – Super generation
	+ Travel around 3,000 miles

**Wintering Grounds**

* Their wintering grounds are in the Sierra Madre mountains of Mexico.
* Micro-climate

Cultural Significance

* Day of the Dead – November 2nd

111

00:15:52.860 --> 00:16:03.630

Mallory Maher: So this is just kind of a craft kind of talking about the issues with monarchs, this is the eastern monarch population, but you can see back here in the 90s, when it was way up here.

112

00:16:04.080 --> 00:16:16.530

Mallory Maher: And now all of a sudden down here when you're 2021 it's a very low number, and that is a little bit concerning especially this is basically the heck tiers of octave occupied forest from these butterflies.

113

00:16:16.920 --> 00:16:25.290

Mallory Maher: And you can get these information from a few organizations, they keep track of us every year, and this is where the tagging comes into play to which i'll talk about in a second.

114

00:16:26.190 --> 00:16:35.550

Mallory Maher: But they have a variety of different maps, but it is concerning and it's very sad, especially that like I said I mentioned before monarchs are easily the most recognizable butterfly in the world.

**Threats against Monarchs**

00:16:37.650 --> 00:16:41.970

Mallory Maher: So some just some reasons for population decline so first of all in their wintering grounds.

116

00:16:42.630 --> 00:16:49.800

Mallory Maher: Winter storms, the climate is changing so sometimes you might have a very bad or even just regardless it's wintertime.

117

00:16:50.130 --> 00:16:59.310

Mallory Maher: You might have a storm come through and if it's a very bad storm and that will kill some of the population, basically, the monarchs would just fall off the trees and the other big thing is.

118

00:16:59.610 --> 00:17:05.820

Mallory Maher: Before station so there's a lot of illegal logging activities taking place in their wintering grounds so that's why. They're kind of really doing trying to do a lot of things to protect those wintering grounds and basically that tourism that people generate from people traveling to see the monarchs. It's having such an impact on the economy, they really want to highlight that and protect it so there's a lot of people that are trying to protect monarchs there.

121

00:17:22.590 --> 00:17:29.250

Mallory Maher: And then the other thing is when you think of South Carolina, for example, do you think of open prairies? Not quite so there's actually more trees now in the United States, and there were when Christopher Columbus first came over. Basically we transform that landscape, we may we have all those forces trees those old growth forests. At one time there was buffalo in vast fields and prairies all throughout and down the east coast or in the eastern United States now it's not so much. Habitat loss is a huge issue of monarchs and then the other big thing is habitat fragmentation and where milk weed likes to grow. It likes to grow along roadsides now and but oftentimes you come in and you're going to mow down that milk lead or you're going to spray that milk weed, because I don't want it there, so most people view it as like a weedy type thing so that's a huge issue. That's why there's a lot of different ways that you can help monarchs and 4-H clubs can participate.

**Monarch Tagging**

00:18:23.640 --> 00:18:28.680

Mallory Maher: And so, this is where we're going to talk about monarch tagging, and this is one of my favorite activities. We do this through an organization called monarch watch and you can see, you close that picture of the tag right there. it's literally just a sticker and I have some examples for you guys which i'll stop sharing my screen in a second and i'll show you guys, but I just wanted to kind of show you the supplies. The reason why we do monarch tagging first of all, it is a massive it's a great citizen science activity.

132

00:18:52.620 --> 00:19:04.020

Mallory Maher: It also is basically a population survey is a way that scientists can understand what the population is doing so, when they tag these monarchs they actually have an incentive for The people down in Mexico to recover tag monarchs and what they can do is they can report, the number and the tag and it can tell them where that monarch was captured, where it was tagged how far it traveled how long it took them to get there, and so that gives them idea of what the population is actually doing so it's really cool.

135

00:19:24.270 --> 00:19:34.440

Mallory Maher: So, with the supplies here, I would say, for tagging monarchs, this is the minimum you need i'll show you kind of the above and beyond, you don't even need live butterflies to talk about tagging minor monarchs. This little tagging kit it's $15 you can get it from monarch watch. It comes with everything that you need the stickers the sheet has a nice little newsletter.

138

00:19:51.240 --> 00:20:06.270

Mallory Maher: monarch figurines was i'll show you why I recommend having these little figurines and where they get them a butterfly for pavilion if you do decide to go live specimen just so that way it's sometimes easier, just to have them in there and then butterfly or in segments.

**Tagging Steps**

00:20:09.990 --> 00:20:14.250

Mallory Maher: first you catch the monarchs which is easier said than done.

These guys you think that they it'd be super easy catching butterflies it's not they are tricky.

I will show you some techniques and tricks to do so, you want to fill out your data data sheet.

And then, basically, if you fill out your data sheet, you will place the sticker or the tag on the discal cell, which is this man shaped one I think you can see my mouse set looks like a little mitten that as a cell that it will go on. And then you release them so it's super easy, which I am going to show you a video in a second.

146

00:21:05.280 --> 00:21:10.980

Mallory Maher: So we just have some tips and tricks these monarch wings, if you can find those is also a really fun thing that you can get as well.

147

00:21:11.370 --> 00:21:24.210

Mallory Maher: And i'll show you you notice Stephen is one of my 4-H volunteers, but if you notice how he's kind of holding the net up like that I can look up the big monarch that's a really a good technique, but I haven't video that's.

**4-H Tagging Video**

155

00:22:50.700 --> 00:23:04.830

Mallory Maher: So that was kind of a quick little video but I felt like it was easier, just to kind of show kind of the capturing of what they are doing, which I can kind of show again, which I will show you exactly how to hold them in, let me figure out how to stop sharing my screen in a second.

157

00:23:08.910 --> 00:23:20.160

Mallory Maher: Perfect so I mentioned monarch butterflies here's my little figuring there's a myth, saying that you don't touch the wings of the butterfly they're fragile they're going to do whatever.

158

00:23:20.820 --> 00:23:31.020

Mallory Maher: With monarch so it's kind of a myth obviously you want to be careful with them, but if you think about it monarch butterflies are traveling 3000 miles, so if they're traveling 3000 miles they're clearly pretty sturdy little guys, so this is how you hold a monarch butterfly you simply you're basically grabbing both there for wings and their high winds together you're kind of closing it and that's it.

160

00:23:43.170 --> 00:23:47.310

Mallory Maher: If you notice there butterflies will naturally fly upwards into the Net, so what.

161

00:23:47.790 --> 00:23:58.380

Mallory Maher: caitlin was my intern what she did was you're basically kind of trapping them up in that top part so that way you can kind of REACH your hand in there and they'll naturally kind of custom around there grab them like this.

162

00:24:01.380 --> 00:24:12.810

Mallory Maher: each sticker has unique number to it and all you would do is fill out your data sheet. The date that you caught them the location you taught them the tag number if it was male or female, if they were wild or captive. You can raise monarchs and you can release them that way, that is a complete option but it's kind of a little bit more fun to catch him on your own so once you have your recorded sticker you peel it off, and you simply just stick it on the discal cell there. And while off and then after that they're good to go it literally is just a sticker you it's just amazing how simple you think that it's fairly complex thing but it's a sticker and it's pad, but that is a number so super easy very fun activity.

166

00:24:57.660 --> 00:24:59.400

Then let me go back to that.

167

00:25:04.350 --> 00:25:10.950

Mallory Maher: Okay um so yeah like I said it's easiest to again if the catch them, while the monarchs actually on the flower.

168

00:25:11.220 --> 00:25:20.370

Mallory Maher: If you try to catch them in the air, like said they like to fly a naturally will fly upwards, and they can they swear they somehow see your net coming and they're out of there you barely catch him ever in the air.

169

00:25:21.180 --> 00:25:25.560

Mallory Maher: it's a lot easier when they land on the flowers and they naturally just kind of go up into your net.

170

00:25:27.210 --> 00:25:34.680

Mallory Maher: you tag monarchs basically starting in depending on your latitude lines, I put an arrow where we kind of fall in South Carolina. mid October is your best bet, but you can start tagging them early in late September, you can even start tagging them late into November they're still monarchs passing through I know there's a bunch still in charleston.

172

00:25:46.440 --> 00:25:57.300

Mallory Maher: um, but you can kind of go through whatever this is when you really want to highlight your program so October is a great month to kind of highlight tagging monarch butterflies, you have a couple of weeks that you can do it.

173

00:25:57.810 --> 00:26:08.940

Mallory Maher: But if you notice here there's a data sheet that you eventually report your numbers back to monarch watch the organization, this is my data sheet that you filled out, and you can see here each butterfly has their own tag number.

174

00:26:10.500 --> 00:26:21.750

Mallory Maher: I have the date that I tagged them what I did it if they're male or females um obviously the w stands for wild so I caught them in the wild and then you just go through.

175

00:26:22.290 --> 00:26:33.240

Mallory Maher: And so the cool thing is if they ever happened to recover your tag in Mexico, you will get an email from monarch watch telling them hey I found it and you can look and see I found this tagging Texas.

176

00:26:33.480 --> 00:26:41.850

Mallory Maher: On this date so it's really neat i've never had it happen, but maybe one day it will happen, but it's still really cool that the potential of it happening there.

00:26:46.950 --> 00:26:56.190

Mallory Maher: So these are all different for eight years that i've had through my junior naturalist program over the years and we do this for entomology. They all tag monarchs and we have them do everything they want, if they want to hold them they don't have to, but most of them, even if you have something to sell I don't want to hold them, eventually, they all want to hold them.

**4-H Programming**

181

00:27:12.900 --> 00:27:23.550

Mallory Maher: I would say your best advice is focusing on the key migration, so you basically can have your own programming by focusing what a monarch needs so you have your fall migration, where you can talk about tagging monarchs. In the springtime you can talk about making sure that you have milk weed available for them and making sure that when they are making their migration backup north of they have a place to stop. In the summertime because they need food and pollinator garden, so you can have a lot of opportunities.

184

00:27:41.790 --> 00:27:50.250

Mallory Maher: Monarch Tagging, parts of an insect, Monarch life history. going through the whole stages in life cycles of a monarch butterfly talking about their migration and what makes them a little bit unique. And then I have a bunch of these little figurines and

give them an opportunity to learn how to hold a butterfly. Once they are comfortable with the figurines tagging them using I usually use the tags that I have left over from the year past or you can use them, if you have a bunch you can use them this year it's fine. get them practicing that and then what I typically do is we usually go out ahead of time and catch a bunch of monarchs hopefully and have them ready to be tagged right then in there and then we if there's time allows will allow them the opportunity to try to catch the monarchs on their own, too.

192

00:28:46.710 --> 00:28:53.130

Mallory Maher: So there's different ways that you can do it, but that's typically what it takes about maybe an hour, but you can go less just depending on what you're doing.

Mallory Maher: i've also done this for groups i've had to do there's a farmer that has come out and do some school groups i've also been able to tag monarchs there, and when I talked about pollinators.

197

00:29:19.050 --> 00:29:27.690

Mallory Maher: If you have 4-H clubs, this is a great monthly activity, you can get involved citizen science project. i've done pollinator summer camps before.

198

00:29:28.260 --> 00:29:33.510

Mallory Maher: So I talked about all different types of pollinators and, obviously, you can good time to talk about monarchs and how they need.

199

00:29:33.780 --> 00:29:41.850

Mallory Maher: places and things eat and why you want to make sure that you have things blooming year round, so that way that you can make sure they can make it down to Mexico.

200

00:29:42.570 --> 00:29:51.720

Mallory Maher: In schools is a perfect thing to talk about life cycles, I know I think it's I forget what great it is, but I know one of those early grades that cover life cycles and monarch butterflies would be a great thing where they can kind of continue a year round.

202

00:29:56.370 --> 00:30:03.750

Mallory Maher: And then citizen science, I think, is where, in conservation is where I think it comes from a huge play of giving back to your community and big for each Program.

203

00:30:04.320 --> 00:30:09.360

Mallory Maher: citizen science so many opportunities so first of all, you have monarch watch, which is the one associated with tagging.

204

00:30:10.230 --> 00:30:15.450

Mallory Maher: tagging them journey north is another one, but there's tons of them Journey North talks about how where the Where the monarchs are on their migration afterwards back up north to their summer grounds and then pollinator gardens. I have a picture of a monarch way station here in that, where you can get through monarch watch as well, but that's basically you can cross it off, you can say that.

Oconee County 4-H has a monarch way station pollinator garden at this location and you can kind of track, and you can have that we have the signage up outside. And you can see where it is basically just need to make sure that you have some milk weed available, you have some perennials, you have some annuals, and there's a little cross our checklist that you can do, but this is a super cool thing, especially if you have the office space available or even if you have a school that's really into this. You can put these signs up and have them everywhere so it's a really neat way to actually kind of register your site and you get a little certificate which is cool.

211

00:31:06.390 --> 00:31:12.750

Mallory Maher: Some other things, obviously this is not for monarch butterflies, but this is a great activity junior master gardener activity where you do the sock puppets but it covers the life stages. I love that activity it's a great summer camp, one that we typically do as well, is the butterfly puddle dishes. you fill out the bottom, a little bit of water and have some stones in there and they can let them paying them and that's for a great addition to a pollinator garden.

216

00:31:48.030 --> 00:32:02.550

Mallory Maher: And then the big thing is pulling our gardens as well, so if you have the ability in the ability to plant pollinator garden, even if it's just a small garden container gardens go a long way, the biggest thing right now for monarch butterflies is having.

218

00:32:12.900 --> 00:32:19.530

Mallory Maher: They can't make it and why their populations are declining is because they get to an area and they just don't have any food stores. So this is really important for them so even container gardens go a long way. even if you can't really do much if you just promote container gardens and have been trying to have it blooming anytime so that's really good proper opportunity and that's why even notice of our.

**Supplies**

223

00:32:58.170 --> 00:33:12.210

Mallory Maher: the supplies that you need I put kind of the list of where to get them from nature watches, a huge thing that's where I get a lot of my replicas you can also do a they have a great monarch butterfly life cycle figuring thing which is great as well. monarch Watch has a lot, a lot of resources which i'm going to show you guys here in a second just a few more that I have, but those are the main things monarch Watch has so many resources so many educational things and lessons it's a really nice organization to follow.

225

00:33:29.490 --> 00:33:38.250

Mallory Maher: But with that does anyone have any questions before I kind of show you some other things, and if you do get a chance, take a survey, please, but any questions from anyone.

Resources