



Drone Exploring: Career Spotlights

Environmental/Conservation — Club

Overview: Conservationists use drones to count animals, check on forests and wetlands, and spot pollution, all without disturbing the very habitats they're trying to protect. In this session, youth learn how a bird's-eye view helps scientists study nature responsibly and practice a hands-on wildlife-counting activity using an aerial-style photo of a habitat.

OBJECTIVES

- Introduce youth to the career of using drones for environmental monitoring and wildlife conservation.
- Explain how drones let scientists study wildlife and habitats without disturbing them.
- Practice counting and mapping wildlife in a habitat through a hands-on activity.
- Build respect for wildlife and the importance of minimizing disturbance while studying nature.

SUPPLIES

- Flip chart or whiteboard and markers
- Printed or projected aerial-style photo of animals in a habitat (herd of animals, birds on a lake, etc.)
- Small animal-shaped cutouts, stickers, or tokens to scatter across a mock habitat area or grid
- Printed handouts: How Drones Help Conservation and Wildlife Count Log

ADVISOR NOTES

- Emphasize that a key advantage of drones in conservation is reducing stress on animals compared to a person or vehicle approaching directly.
- If a real aerial photo isn't available, use any photo of animals from above (a satellite image, zoo aerial view, or a diagram) for the counting practice.
- Discuss how drones can also spot trash, pollution, or illegal dumping in waterways and forests.
- Consider inviting a guest speaker (a wildlife biologist, park ranger, or conservation drone operator) to share how they use this technology. See Optional Extensions.
- If no guest speaker is available, Advisors can run the entire session using this outline and the resource links below.

SESSION OUTLINE

- **Welcome and Icebreaker** (10 min)
 - "Animal Census:" Ask youth how they'd count a huge herd of animals or a flock of birds without scaring them away.
- **Safety Moment (Protecting Wildlife and Habitats)** (10 min)
 - Drones must fly high and quiet enough to avoid startling or stressing wildlife.
 - Conservation teams follow rules about how close they can fly to sensitive nesting or breeding areas.
 - Ask: "Why do you think it matters to avoid stressing wild animals, even when we're trying to help them?"
- **Mini-Lesson: How Drones Help Conservation** (15 min)
 - Explain how drones count animal populations, monitor habitat health (forests, wetlands, coral reefs), and spot pollution or illegal activity like poaching or dumping.
 - Discuss how this data helps scientists and park rangers make decisions to protect nature.
- **Activity: Wildlife Count Challenge** (20–25 min)
 - Show the aerial-style photo or scattered animal cutouts across a mock habitat grid.
 - Small groups carefully count and record what they see on the Wildlife Count Log, comparing their totals afterward.
 - Discuss how easy it is to miscount, and why careful, repeatable methods matter in real research.

- **Discussion: What Would the Data Tell Us?** (10 min)
 - Discuss what a scientist might do if a wildlife count showed a population shrinking over several years.
- **Wrap-Up Share-Out** (10 min)
 - Groups share their counts and discuss how a drone might make this count faster and more accurate.

REFLECTION SECTION

Advisor Note: Some sample questions are below. They are designed to help the participants apply what they have learned to their own interests. You are welcome to use these questions or develop your own.

Focusing Questions

- What was tricky about counting carefully and accurately?
- What kind of animal or habitat would you most want to help study or protect?

Analysis Questions

- Why is it important for conservation teams to disturb wildlife as little as possible?
- How could counting wildlife from the air help scientists notice changes over time?

Generalization Questions

- Where else does careful counting or observing matter for making good decisions?
- What's one thing you'd like to learn next about protecting wildlife or habitats?

Challenge: This week, research one animal species or habitat near you that conservationists are working to protect and share one fact you learn.

OPTIONAL EXTENSIONS

Guest Speaker: Invite a wildlife biologist, park ranger, or conservation drone operator to share how they use drone technology, in person or by video call.

Advisor-Led Option: If a guest speaker isn't available, Advisors can run this session using the outline above and the resource links below. No outside expert is required.

Resource Links: search "conservation drones wildlife monitoring" on a video platform for kid-friendly explainer videos.

Group Extension: Create a poster showing one habitat and the wildlife a conservation drone might help protect there.

Handout: How Drones Help Conservation

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Read through the key ideas below before starting the Wildlife Count Challenge.

Wildlife Population Counts

Drones fly over herds, flocks, or colonies to count animals accurately without a vehicle or person getting close enough to scare them.

Habitat Health Monitoring

Drones check the health of forests, wetlands, and coral reefs, spotting changes like disease or erosion early.

Anti-Poaching and Pollution Patrols

Drones with thermal or regular cameras can help spot illegal poaching activity or pollution like trash and chemical spills.

Why It Matters

Accurate, low-disturbance data helps scientists and park rangers make better decisions to protect nature.

Handout: Wildlife Count Log

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As your team counts the habitat photo or grid, record what you see and how many.