The art of going mobile

A comprehensive look at DXing in the outdoors and 20 tips to make it successful

by Chris Kadlec · November 2021 · Web version

In the hobby for more than 30 years, Chris Kadlec is primarily a mobile DXer in pursuit of coastal propagation, which he has studied for the past two decades. He has 80 mobile DXing sites along the shores of all five Great Lakes, concentrating on full bandscans to better understand reception patterns in relation to meteorological conditions in a marine environment. He tuned the AM and FM dials of South Korea, North Korea, Japan, China, and beyond for five years and is best known for his audio documentary, Seoul AM Radio Listening Guide, covering the East Asian medium-wave scene, propaganda, and radio jamming wars on the Korean peninsula.

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Introduction

"DXing dedication? This is an entirely different level of commitment than reviewing SDR files in a heated shack." -Gary DeBock on the dedication of DXing in harsh outdoor environments

The hobby of DXing — listening for distant radio signals — is often a solitary pursuit. We sit at a desk full of radio equipment, much of which is connected to a rooftop or outdoor antenna and rotor, and we spin that antenna around hoping for the best. Throw in a computer, software-defined radio (SDR), autologgers, and other technology, and you can even DX while you sleep.

While this is the reality for most DXers, a dedicated few don't have an antenna or even a radio at home or don't live in a place suitable for receiving distant signals. Often, for them, the entire hobby is on the road: at the beach, in the car, on hilltops, or even deep in the forest. This is the art of mobile DXing, the ultimate quest of tracking down radio signals in the wild. That's been my life in this hobby for the past two decades, learning more than a few tricks from my listening adventures at more than 100 sites in locations as varied as forests, mountaintops, and coastlines from the Great Lakes, Gulf of St. Lawrence, and Atlantic Ocean to the shores of the Yellow Sea straddling Korea and China. Read on, and I'll share with you.

Let me tell you a little about mobile DXing and how best to go about it — how to choose a location, how to prepare, what to expect, and more. While my radio "career" has been primarily a coastal one, my tips and advice are meant to cover any environment, whether on land or beside water, for both AM and FM DXers.

Listening outdoors can be utter bliss or complete hell depending on the conditions encountered on any given day. In mobile DXing, you rarely know what kind of day you'll encounter even after plenty of preparation. There are the days where your biggest worry is forgetting sunscreen to protect you from the blazing sun and the 95°F (35°C) temperatures you'll find yourself standing in for hours, with beach sand topping 130°F (55°C), burning your feet and drying out your skin for days on end. This is a good day. Not all days are good.

The weather might look quite satisfactory when you're driving to the beach, but you quickly learn that weather is a poor predictor of radio conditions along the water's edge. You might expect a warm day and end up standing in air so saturated that your paper log is almost too wet to write on, temperatures so cold at times with high winds that rip your earphones out of your ears and windchills that make you shiver to the point you struggle to write legibly.

Then there are mosquitoes, unaffected by the weather that's making you miserable, barraging you every 10 seconds for 2 or 3 hours, hovering in front of your face and taunting you as you struggle to complete your listening session. Portable radio in hand, you're standing precariously, struggling to keep the whip antenna in position and unable to move even a millimeter lest you lose that signal you

worked so hard to find. Suddenly, it starts to rain and you hear a sudden rumble of thunder followed by lightning, and you realize there's no available shelter. DXing along the coasts, you never know what the skies will deliver both weather-wise or radio-wise. Your best signals may arrive in the most hellish conditions. You might find the unpredictability of it all worthwhile in the end. Or you might remember the day you could barely hold onto your paper or earphones and got nothing of interest out of it.

Speaking on the difficulties faced by Paul B. Walker Jr. in listening on his portable radio outside at night in the elements of McGrath, Alaska, in the state's interior, Gary DeBock states that "live transoceanic DXing in freezing or subfreezing weather is indeed rough, and until somebody tries it out, they have no real idea just how rough it is. You need to make constant frequency choices, language judgments and recording decisions while dealing with numbing cold and very temporary propagation openings. The clock is always ticking — not only on your ability to survive the deep freeze but also on your gear's endurance, and the delays caused by clumsy gloves and frozen fingers. Propagation drop-offs or collapses can happen at any time, and nothing is guaranteed except for the fact that you will end up shivering, and practically frozen. DXing dedication? This is an entirely different level of commitment than reviewing SDR files in a heated shack. You need to work hard for any success, but when you score a breakthrough DX reception, everything is much sweeter because of the challenges that you overcame." Paul twice received southern Australia medium-wave stations with his reception of ABC Newcastle at more than 7,200 mi. (11,600 km.) and ABC Hobart at nearly 8,000 mi. (12,800 km.) on his C. Crane Skywave radio with a 5" FSL provided by Gary himself, prompting radio interviews with both local ABC stations and the national TV news program, "News Breakfast," following his reception in the spring of 2021.

What is best for you?

Unless you're merely walking outside into your backyard, mobile DXing for the dedicated listener is nothing to take lightly if you wish to experience some level of success. There are many aspects to this side of the hobby that are important to know before going out into the field. Mobile DXing might or might not be for you.

Here are some thoughts to consider: If your home location has terrain obstructions that you wish to overcome, going mobile could be beneficial. It's easy to become bored with the same stations all the time, the same surroundings, or even the same radio. Spice up your hobby with a portable radio, a change of scenery, and some new challenges. Here's how to do it:

How to prepare

I think almost anybody in the radio hobby could agree that location is the single most important factor to consider when searching for signals. The good news is that going mobile means you have a near-infinite selection of locations — well, almost. There are some things to take into account:

1. Consider elevation. Elevation is the make-or-break of mobile DXing and can work both in your favor and also against you. Choosing the highest spot could greatly increase the number of stations you receive but will also increase interference from nearby stations, assuming there are any. It might instead be beneficial to seek a location part-way up a hill or mountain where terrain blocks signals from certain directions. By listening on a hillside sloping down in one direction, it becomes easier to weaken stations, including any locals, on the other side. This allows for maximum signal strength and the increased possibility of hearing distant signals that aren't being blocked. By weakening and nulling some of your nearest signals, you stand to potentially capture ones from distant locations. This

strategy works especially well along the coast, where large bluffs or dunes may be present. The late Sheldon Remington worked days of ducts between southern California and his home in Pāhoa, Hawai'i in June 1989 to receive more than two dozen FM signals at distances up to 2,500 mi. (4,000 km.), all while utilizing this very method of a gradually-sloping hillside to catch signals even while thousands of feet below the usual needed elevations to work that particular duct. Propagation across water paths — marine ducting — is prevalent in the spring and summer months and under certain weather conditions, and the ability to block out nearby signals can yield catches from hundreds of miles away. With such ducting, you could find your local stations entirely absent even while in close proximity to them. As fellow mobile DXer Andrew Knafel has concluded, you don't need the highest elevation possible, but instead a clear unobstructed view in one particular direction. When local signals can be attenuated by terrain obstructions, your likelihood of receiving distant signals is enhanced. Elevation can be your best friend or your worst enemy — the key is using it wisely.

"People who stumble upon you in rural areas are often chatty and curious, more likely to ask what you're doing and how it all works. And that's after they've spent 10 minutes uncomfortably staring you down, looking for the "drone" they believe you're flying on the horizon with the radio antenna you're waving around."

2. Listening in rural vs. urban areas: which to choose? Where the DXing hobby is concerned, listening in isolated rural areas is almost always the best option. Not everyone is necessarily in or close to a remote area with a largely empty FM band, at least not the kinds of areas I often find myself listening in. Urban areas, when lacking available rural locations, can still bring in some good distant signals, especially if using the natural terrain. But this introduces a new challenge — privacy. People who stumble upon you in rural areas are often chatty and curious, more likely to ask what you're doing and how it all works. And that's after they've spent 10 minutes uncomfortably staring you down, looking for the "drone" they believe you're flying on the horizon with the radio antenna you're waving around. Others may assume you are tracking tagged wildlife with your radio and earphones. On occasion, these interactions can be enjoyable if you're not in a rush and don't mind sharing your hobby with people who are curious. You may even encounter ham radio operators, science teachers, or others who can understand your activities. But you might not welcome a sudden interruption while trying to identify a signal at the top of the hour.

On the contrary, however, DXing in a large urban area — even if it means seeking lower-powered signals or pirates — will often attract little attention as city folks are used to quirky individuals. I've sometimes had a dozen unwanted interactions on a single beach or hillside compared with not a single curious look over the course of four or five hours in the middle of busy Chicago parks. Go figure!

There are times when it is very difficult to avoid urban areas, especially if you are Mark Connelly, who tunes transoceanic AM signals across the Atlantic from Cape Cod, south of Boston. With much of the coast in the northeast United States quite urbanized, it can be difficult to find remote areas that are free from interference. Mark has a long history of simple mobile outings at local beaches both north and south of Boston where European, South American, and African signals are readily audible, especially at sunset, proving that just because you live in the city doesn't mean you can't still DX, especially when your interfering locals originate from the opposite direction as your targets. Mark composed the highly-recommended 1994 article, "Mini-DXpeditions," which discusses how to make

the best of your surroundings in the short-term, the pros and cons of using AM antennas in public areas, as well as a valuable checklist of supplies for such mobile outings.

3. Avoid areas where interference is likely. These days, whether on the FM band or AM band, you're going to run into interference. Sources of interference could include noise on adjacent channels from IBOC (in-band on-channel) digital broadcasts, increasingly common low-powered translators, or close proximity to station transmitters which cause signal overload and weaken distant stations. The best locations are between major markets, i.e., not too close to any grouping of transmitters. AM signals are particularly prone to electrical interference from power lines, solar farms, business and residential areas, and any transmitter sites, no matter the band on which they transmit. Also, don't forget that personal car transmitters are rampant nowadays on the FM band and have enough power to block out entire frequencies if that car is parked in a nearby lot, even while listening an extensive distance from that parking lot.

4. Choose out-of-sight public spots and avoid private property. It should be a no-brainer, but avoid private lands unless the landowner has expressly granted you permission. Even then, you first need to explain to someone who might have no concept of the hobby what exactly you're doing. Choosing the proper location is of course essential, but sometimes your options are limited when all your best potential sites happen to be on private land. Instead, one option is to look for the nearest public lands, preferably a site with parking and other amenities such as restrooms to make it worthwhile. Keep in mind, as well, that property owners and passers-by might also wonder what you're doing, going so far as to question your right to be there, asking you to leave, or even calling the police. Therefore, avoid listening too closely to private lands or private homes or even within direct sight of homeowners. England-based AM DXer John Faulkner, who runs the popular Skywaves radio forum, reports on his mobile exploits in his aptly-titled article "The World's Unluckiest DXer," outlining his numerous failed attempts to set up at favorable area sites being foiled by the most unfortunate of circumstances. Sometimes, you'll find there is really no ideal place to listen.

5. Choose a site with nearby shelter and/or amenities. While it may not be easy to juggle a more out-of-sight location with amenities, it's always helpful when bathrooms are close at hand, because when you're out in nature for many hours, nature will eventually call. The closer the bathroom, the more advantageous it will be. As well, weather doesn't always cooperate, and having the option of a shelter, even if it's a dense patch of trees, to shield you from the sun or rain, is better than nothing. The best option — which I regularly utilize — is to find a state or provincial park close to or right beside an ideal location that can be used for overnight camping accommodation complete with bathrooms and other services often within walking distance of your radio site. However, be sure to pay attention to operating hours for such sites, especially if only for day use, as some will close their gates after sundown, possibly trapping you inside.

6. Consider reserving the perfect hotel room. You don't have to brave the elements and venture outside battling mosquitoes, wind, sun, and everything else that comes with outdoor listening. Whether it's just for the night as an addition to outdoor DXing, perhaps because braving the elements isn't your thing or because you want to bring more equipment with you than you can take outside, finding a hotel room (with a balcony if possible) could be useful. Inquire with the hotel front desk staff and/or look at photos of the hotel ahead of time to request a room that is high enough and has a balcony or large window facing the direction you'd most prefer to listen. Assume that the hotel is built with materials that will block or greatly weaken your reception in directions other than that of the window, though it's always possible to get lucky. Furthermore, consider the fact that some properties have rooftop access, the ultimate jackpot providing 360 degrees of listenability with all the necessary comfort and conveniences a brief walk downstairs. Those hotels constructed primarily with concrete will act much

like listening on a steep hillside — if your balcony faces west, you are likely to pull in signals from the west with those from the east significantly weakened by the concrete structure and vice versa. As Andrew noted in his own DXing in April 2017, he could get distant digital TV channels of 500+ mi. (800+ km.) from Miami and Fort Myers decoding over top of locals simply by using this method to enhance distant signals while using his hotel itself to weaken locals.

7. Know which direction is which ahead of time. This should go without saying, but it's a mistake I have made numerous times with no landmarks in sight as reference points. It's vital to know which direction you're aiming your antenna as you listen. You might assume you're aiming north all night and then look at a map and discover you were, in fact, aimed east. This happens. A lot. If you choose a site ahead of time, pay special attention to which direction is which, even if it means taking a compass along with your gear. It could make station identification much easier. Likewise, with coastal listening, shoreline orientation is crucial to which stations are received, with the large majority of the strongest signals coming from directly across large bodies of water, especially in the daytime, as opposed to parallel to the shoreline as is common after dark.

8. Pay attention to drone rules and law enforcement. While taking all this advice on finding the best location for mobile DXing, you've probably found yourself in a quieter state or national park. After all, they're public, they often have a lot of open space to stay out of sight, and may have beneficial elevation and blocking terrain. But — why drones? These days, people often assume a portable radio with its visible antenna is being used to operate a drone. It's a simple reality and it has become a major annoyance for me on multiple occasions, more often than not.

Many state and national parks prohibit drones and park rangers can often be found on both state and federal lands actively enforcing this restriction. For someone holding a radio out in the open for a few hours, chances become rather high that someone will eventually confront you, and it can be frustrating. To avoid this, pay attention to rules ahead of time, choose as secluded a location as possible, or perhaps stop in to report your own activities upon arrival at the front gate or park office. This can greatly assist in avoiding any unnecessary confrontation, because we all know those come only when you're waiting for an elusive station ID.

At the same time, if you find yourself appearing too conspicuous on public property, especially in your car after dark, it never hurts to notify the local police department of your intent ahead of time, especially in a smaller town. For obvious reasons, law enforcement is trained to search for parked drivers slumped over with their head facing down. And, face it — that's most DXers as they tune the dial jotting down notes. The last thing you want is a stressful interruption from the local police with an unruly officer who has zero understanding of your hobby and zero intent to believe it exists. It can be helpful to carry a copy of DXer Saul Chernos' article "Obsessive listening," which he wrote for the Toronto-based Financial Post in 1999. He always keeps copies on hand to quickly assuage any concerns law enforcement may have about our fringe pursuits.

9. Understand what fuels propagation on each band. If you're part of the hobby of DXing, chances are rather overwhelming that you're in it for the sake of propagation. Propagation is the behavior of radio waves as they travel and is the method in which signals propagate from one location to another through the atmosphere. Signals on the FM band propagate in very different ways than do those on the AM band. Understanding these methods of propagation and the differences in how AM and FM stations propagate is important to make the most of your hobby, especially when choosing a location in which to listen.

"The high pressure area is the most common pattern to create inversions and a somewhat universal source across different regions of the country." -Doug Speheger, meteorologist and DXer

a.) Know the different modes of reception. For the FM band, entirely at the whims of weather in the lower atmosphere in which we all live, different weather systems and conditions can bring different reception. William Hepburn, a retired meteorologist widely known and revered in the DXing community for his tropo forecasts and general expertise on the subject, has valuable resources outlining a number of different modes that reception may take depending on the behavior of the troposphere. Knowing these modes — or even understanding how they work in a very general sense — can be absolutely essential in correctly reporting your catches, earning the respect of your peers, and finding success in the hobby. It will also assist you in understanding the path the signal took to arrive to your radio. Sometimes it's more impressive than you believe!

It is also essential to understand the difference between modes of tropospheric propagation and meteor scatter (Ms) and E-skip (Es), two very different, yet quite common, modes of reception depending on the season. Both of these modes are more likely to be received in a rural location while mobile DXing, especially where the band is open. FM and TV signals can also be received via auroral propagation (Au), coinciding with auroral displays, though the mode is far more helpful on the AM band.

b.) For FM, inversions are your friend. For FM listening, a stable overhead high pressure system with clear skies generally guarantees optimal outdoor listening. Doug Speheger, a meteorologist at the Norman, Oklahoma office of the National Weather Service and a DXer himself, agrees that "the high pressure area is the most common pattern to create inversions and a somewhat universal source across different regions of the country." Not only does this keep you dry and comfortable, but tropospheric ducting occurs most often with high pressure systems over land, while the same setup over large bodies of water often helps to form strong and stable temperature inversions that can assist in long-distance catches for hours at a time, if not longer. Such inversions over water can be visible even to the naked eye under the right conditions, especially at sunset as the sun approaches the horizon, with the inversion layer just above the horizon often appearing darker than the surrounding sky. As light refracts off these differing layers of air, mirages of distant objects such as freighters, skylines, or more often than not, of water itself, can sometimes be seen. It can be a special sight to physically see the inversion assisting in your reception.

High pressure systems that stall over land for many days can bring some incredible long-distance openings. At the same time, temperature inversions in general with warm air aloft have the potential to fuel great tropospheric conditions essential to long-distance reception.

On the contrary, low pressure systems and even the coldest days in the dead of winter can bring in signals, depending on what exactly you're seeking to hear. Poor conditions can weaken typically-strong stations and allow for reception of lesser-heard stations or even offer tropo scatter fade-ups at distances of up to 300 miles. All weather patterns have their advantages and disadvantages, so learn through experience to determine what works in your location, what conditions you're seeking, and which conditions you prefer.

"It was the most fun that I've ever had with my clothes on." -Dr. John Bryant, speaking on medium-wave reception from Easter Island

c.) For AM, fertile soil and salt water are the key. Working the AM band requires a very different set of parameters for maximum success. Because AM signals propagate much differently, atmospheric conditions alone just won't do the trick. As discussed by Gary DeBock, who targets transoceanic signals from the west coast of the United States, there are a few types of locations that are superior to all others.

First, fertile farm soil is beneficial whether you seek domestic or international signals. Those DXers who reside on such soil in the middle of the continent — such as Richard Allen in northern Oklahoma, an equal distance from both the Atlantic and Pacific — successfully prove the benefits of fertile soil again and again, in his case with multiple Australian AM signals and African and European longwave catches, stations more commonly expected along coastlines.

After all, salt water is the greatest propagator on this band. Ocean beaches are yet another great location with oceanside cliffs ranking high on the list of favorable listening hangouts. High cliffs along the Pacific coast of Oregon provide mobile DXers with massive New Zealand, Pacific Island, and Japanese signals every summer, many of which are heard nowhere else on the continent. The popular cliffside site on the side of Neahkahnie Mountain in Manzanita is simply unrivaled in its results shared amongst a number of listeners who gather there. In this region, as Nick Hall-Patch states, September and October, then February and March are best for trans-Pacific signals with mid-winter far more unreliable but instead favorable for trans-Arctic signals at north-facing sites. On the opposite side of the Pacific, Satoshi Miyauchi — who had last listened in Oregon with Gary and Nick a few years before — had spent his time seeking the Asian equivalent of the Oregon cliff, finally stumbling upon Ogasaki Wing. The oceanside cliff southwest of Tokyo rises 720 ft. (220 m.) above the sea with a parking lot below at 260 ft. (80 m.) and pulls in stations from some exceptional distances. Similar to FM propagation over large bodies of water, the shape of the coastline is essential in which direction is received. Plus, also similar to the FM band, monitoring signals on the side of a cliff as opposed to atop the cliff is of enormous importance.

For some of the greatest DXing experiences of one's lifetime, for those who have the chance, remote islands surrounded by salt water cannot be topped. Signals from all continents of the world can be heard with distances as great as almost 8,000 mi. (13,000 km.) as heard by Gary from the Cook Islands in 2018 with portable equipment. As he recalls in his 2019 article "Innovative Ferrite Antennas - Worldwide DXing Excitement," the late Dr. John Bryant experienced such reception from Easter Island in 2007, remarking that "it was the most fun that I've ever had with my clothes on." Listening to distant foreign stations from such thrillingly beautiful locations is what mobile DXing is truly about.

10. Make use of forecasts and real-time resources. Location isn't everything in the hobby of DXing. Timing is another important factor. These days, there is no shortage of resources at hand for even the most inexperienced listener to utilize in an effort to maximize potential in the hobby. William Hepburn's color-coded tropospheric ducting forecasts are used worldwide to better predict radio openings on the FM band. Existing now for two decades, these forecasts allow you to plan in advance when best to listen or in which directions to aim at a given time. After checking out the forecast, it's a good idea to use Jon Harder's VHF Propagation Map to examine real-time conditions on the band. This map shows current paths received between amateur radio (ham radio) contacts in the 144 MHz band, which propagates the same as the FM band, making the map a valuable tool for real-time FM conditions. Forecasts might not always pan out as expected, so using a real-time map such as Jon's can be a helpful secondary tool for predicting conditions.

What to bring

Now that you have successfully chosen the ideal location, the next step is to pack the gear you'll need. What should you take along? Here are some ideas.

"Your choice of equipment doesn't make you any more or less of a dedicated mobile DXer."

11. Choose your receiving equipment. Depending on your level of comfort, you can take a small portable radio or even a higher-end receiver and antenna with any additional equipment as you see fit based on your needs and the accessibility of your chosen site. Your choice of equipment doesn't make you any more or less of a dedicated mobile DXer.

a.) Take high-tech equipment on the road. Take Andrew Knafel as an example. The Ohio-based DXer is primarily a digital TV DXer gone mobile for improved results. Originally included in his vast collection of equipment was a TV autologger connected to a Raspberry Pi (a single-board computer). He connected these to the Internet through a cellphone hotspot to upload his newly-acquired logs. A Zenith tuner box and small TV were used in addition to a vintage Channel Master 7777 preamp, an LTE filter and complete FM bandstop filter when necessary. But it doesn't stop there. Add to that an inverter to convert the car charger to two standard outlets and a power strip with multiple outlets to make it all work. Of course, that all assumes the car battery holds up as planned; taking a battery charger for those times you accidentally drain your battery can be very beneficial. Moreover, Andrew took advantage of a 4-bay bowtie antenna that could be placed outside the car or even indoors. A 4-bay is relatively small and had also performed well for him in his oceanside high-rise hotel in Myrtle Beach.

But as with any hobby, one learns to adapt to make DXing easier. Andrew would later take his portable setup and compact it further, now using a 20 Ah Bioenno battery to power most of the setup, a long-lasting battery used by many ham operators as it can handle transmitting as well and has a longer life for each charge than do others. He has simplified his entire setup to fit in a single easy-to-carry box with only the need to attach the antenna, a small UHF Yagi with a foldable mounting base. Like his bowtie, it still easily pulled in Miami signals from Myrtle Beach during his more recent attempts of June 2021. While Andrew's bowtie and small Yagi antennas are more suitable for a portable setup, if you want to rip your large Yagi antenna off the roof of your house and stuff it into your vehicle to set it up at your site, you can do that, too!

On the medium-wave front, those who are highly invested in the hobby and have a goal of transoceanic reception typically have a lot of gear to haul on their outings. Unlike FM, the AM band requires more antennas and more equipment in general and each DXing scenario has its own advantageous equipment. Similar to FM, antenna directivity is of great importance to best receive your targets or to null pests, such as locals. Mark Connelly has experienced success with broadband loops, including a version of which is attached to the roof of a car, allowing him to listen inside his car. These rooftop broadband loops can be either a figure-of-8 or a cardioid and allow the listener to avoid many of the downsides of mobile DXing, such as inclement weather, people, law enforcement, and bugs. Living in densely populated Massachusetts, he prefers a cardioid type antenna over a figure-of-8 as most of his pests — domestic stations — are in the opposite direction of his overseas targets.

Those who are simply looking for a favorable isolated location to seek domestic medium-wave stations can take their equipment on the road, both high and low-tech. In their video presentation, "2 Phools in the Phield," Mark Durenberger and Mike Shafer present their stories of taking a truck into the remote Utah desert for multi-day outings in 2012 and 2014. They arrived complete with a trailer and two ATVs to set up a 2,000-foot beverage antenna, among other antennas, plus higher-tech equipment, including multiple radios and an SDR, even successfully transmitting on a ham radio via a D-Kaz antenna. Such outings, especially with fellow DXers, can become a DXing vacation, often referred to in the hobby as a DXpedition. Finnish DXer, author, and journalist, Mika Mäkeläinen, offers medium-wave DXers around the world an experience of a lifetime by renting out their own DXpedition site near Partakko, in the Lapland region of Finland's far northern extent. Built in 2010 and owned by a group of eight DXers, one being Mika, the site, named Aihkiniemi, includes 14 very directional beverage antennas, each antenna roughly one kilometer in length, thus allowing rare reception from all around the world. These conditions are experienced by Mika — who has tuned the dials for the past 40 years — when he joins fellow DXers to enjoy the site together on DXpeditions for periods of a few weeks each year.

Furthermore, a software-defined radio (SDR) can be especially helpful for those DXing AM and FM radio. With minimal equipment and a laptop, it's possible to record the entire band for a few minutes at a time. Nick adds that "with small and very capable SDRs (Airspy HF+, SDRPlay RSP-dx, and Elad FDM-S2) that are powered by USB from a laptop computer, there is no reason not to go mobile." While utilizing SDRs can lead to large files and a massive backlog of content to sift through, this approach can be extremely beneficial when time is limited, when you want to DX but also enjoy your vacation, or in addition to live DXing, especially if recording at the top of the hour. Equipment-wise, with FM, a simple antenna is all that is necessary. You may not find the stations that lie in the nulls of stronger signals, but using the SDR may already be considered a "better than nothing" method of tackling DX. With AM, broadband loops, whether figure-of-8 or cardioid, are the best option for spectrum capture.

In the case of all high-tech equipment, be sure that the equipment you have painstakingly packed with your gear does not generate electrical noise that can hamper your abilities to hear weaker stations, especially for those listening to the AM band. Some laptops prove to be a terrible nuisance while others are noise-free, so asking around before purchasing a new device could be of great benefit. Your power supply can generate such noise, which often contradicts the entire reason for mobile outings for many DXers.

b.) Low-tech equipment can perform exceptionally well. Conversely, my own equipment includes a Grundig G8 Traveller II Digital portable radio with earphones, paper, a pen, and sometimes an attached voice recorder. And that's all! I've used my own portable with its extendable dipole antenna and even my MP3 player with only an earphones wire as an antenna for easy and regular 500+ mi. (800+ km.) FM reception deep into China from my Korean home site. I've even heard double-hop E-skip from Malaysia at over 2,300 mi. (3,700 km.) with this basic setup. Low-end and modest equipment can go a long way if you use it properly.

c.) Design or modify your own equipment. Gary creates his own lightweight affordable antennas for long-range travel DXing on AM. His systems including FSL (ferrite sleeve loop) models are designed to provide a powerful inductively-coupled gain boost to any portable radio using a loopstick. This is especially meant to be used with ultralight radios (ULRs). For AM DXing, ferrite antennas — which can vary from a tiny internal loopstick up to monster FSLs — are usually a must. Better yet, he custom-makes these mobile setups and offers them to deserving hobbyists free of charge, DXers like Paul B. Walker Jr., who used Gary's setup to hear southern Australia from Alaska. Unlike Mark, Gary uses the

tuned loop approach, which involves having to DX outside his vehicle at his chosen sites, though some have used tuned loops with varactors, therefore allowing them to stay in the car aside from when moving the loop becomes necessary. As AM radio propagates exceptionally well over salt water, something his Pacific Northwest location has plenty of, whether inside a car or outside, the results are certain to be astounding. Rain or shine, he often finds himself mobile on the side of an oceanside cliff with his homebrew models. Furthermore, his DXpeditions take him to beautiful coastal locations such as Hawai'i, the Cook Islands, and Hong Kong, forcing his design to be airport-friendly. Designed not to cause undue anxiety at airport security and with a 100% success rate to date in successfully passing security, his "frequent flyer" antenna models use PVC pipes as a base to create an easy-to-use equipment support stand that's easy to carry anywhere you go. Gary's wide variety of innovative setups show that if you can't find something suitable for your specific mobile needs, much like with Andrew, you can simply design it yourself.

If your antenna, rotor, and spiffy indoor setup are your pride and joy and you need the comforts of home, mobile DXing may not be for you. Andrew's setup is undoubtedly technologically advanced, which works well for him as he's searching for TV signals — a visual medium. My own simple setup, on the other hand, is audio-only and therefore low-tech and less demanding. But the results are the same — we enjoy our mobile DX pursuits which allow us a better variety of signals than we'd experience at home. No matter the equipment you're taking along, mobile is mobile. Use what works best for you.

Whatever equipment you choose, be sure it can withstand the elements. Use common sense. Nearly all my chosen sites offer plenty of fine-grain beach sand with a persistent wind, meaning my backpack often has inches of sand on or even inside it by the end of my session. Protect your equipment and belongings with plastic bags and seal-proof containers, and make sure emergency shelter is nearby — even if it's your car. Above all, plan for the unexpected. Your equipment is an often-costly investment, so don't take chances with rain, lightning, sand, or wind and expect to come out on top every time. Nobody wants sand inside their extendable antenna, but it will find a way every time you drop your guard.

12. Bring supplies, including back-up supplies. Some of the most disappointing memories I never live down are the days where monster tropo is blasting in, I'm out in the field and realize I've come unprepared. I expected nothing much so I didn't fully charge my battery or bring backup batteries for what would become an unexpected 12-hour session in the forest. I didn't realize my recorder batteries were on their last leg and they failed soon after arrival, an hour from home and a half hour from the nearest store. Equipment can break or malfunction at the most inopportune time. Prepare for anything and everything, both in terms of equipment and weather conditions. If it can fall from the sky, prepare for it.

What are some of these supplies, you might ask? Batteries are often necessary when you're a mile from the nearest electrical outlet and bringing extras along can't hurt. Don't forget some paper to keep track of your loggings. I've managed to strenuously climb a mountain only to find I left my paper log in my car. While it was frustrating to see my car down below but be a half-hour hike away, a food napkin in my bag saved the day. Bring a pen. Actually, bring several pens, including multiple colors. I often use one full existing bandscan taken in one location and then save as much as 25% of my time at the second nearby location with similar stations heard by using a second color to jot notes on the same log. In addition, carry a pencil; even water-resistant paper couldn't hurt just in case it rains. If your session lasts longer than originally planned, especially if you are in a wooded area or area where sunlight doesn't reach as well, a flashlight or even a headlamp can be among the most helpful supplies. If you're trekking through areas where you may get injured, or even if you're not, a first aid kit

can always be beneficial. At one rather remote site, an antenna element on my portable radio broke. After much searching through my car and bag, all I could find to repair it was a spare bandage I had with me. Problem solved, and the makeshift fix still holds to this day!

Prepare for the elements. If it comes from the sky, it will eventually find you. Sunscreen will prevent you from becoming either a tomato or a raisin when you think you won't. A poncho or umbrella can help as a last resort when shelter is unavailable. I have stubbornly used both with my portable radio and while it is a difficult task to hold an umbrella while holding a pen, paper, and radio, when you're on a set schedule, you get the job done while saving your equipment from being ruined. Pack warmer clothes. Just do it, because a 15-minute walk to a listening site on a beautiful day can quickly go wrong. Once you're shivering to the point you can't feel your fingers holding your pen, you'll be left wanting your hat and jacket. Also prepare for bugs — one of the most undesirable things that fall from the sky. Remember to bring bug spray and take time to find a bug jacket with a light mesh head covering. It's a cheap but invaluable investment. I've found myself at more than one site at dusk where most locals are wearing mosquito netting, usually in areas where bug spray is ultimately useless. An unplanned overnight listening session in the forest — one of the biggest radio openings of my days in the hobby — got me 160 mosquito bites in a matter of hours. If you're among the dedicated few to brave such listening sites, invest in protection beforehand. Finally, don't forget a comfortable waterproof or water-resistant backpack to hold all your gear.

At your site

Now that you've arrived at your site with your gear, what are some important tips to remember once you've turned on the radio? Everybody logs in their own way. While some have an interest in weather, others are enamored by hearing far-away lands, while yet another group listens only out of technical interest of working with antennas and various electronic gadgets. Your main focus will decide your logging habits.

13. Expand your logging potential. While we all log stations in our own fashion, there are nonetheless important guidelines one should be reminded of in advance to maximize potential.

"DXing from these two remote sites compared to DXing from my house at five miles from the local antenna farm has been the difference between night and day!" -Steve Rich on DXing from his shared remote sites

a.) Consider going automatic or remote. If television is your aspiration and you have the equipment to back it up, consider using an autologger, software used primarily for unattended logging of digital television. If you typically receive merely a smattering of stations you can recall off the top of your head, this option may not be necessary. If radio is your goal, you have many frequencies to cover with potentially multiple stations on each frequency. An autologger can assist you in logging a greater number of stations if this is the route you wish to take. However, for some, an autologger can't quite match the experience of listening from a completely different location while still chilling in their underwear at home.

For those who have a great deal of technical knowledge and money to spend, setting up a remote DXing site is an option. Remote sites are especially helpful for those who live in interference-heavy urban areas yet own land in more remote rural areas suitable for setting up such sites, which may have favorable reception. Every aspect of such sites — antenna rotation, cranking towers up and

down, powering amplifiers, controlling the mobile site computer, cameras, accessing weather information, even turning indoor or outdoor lights on — can be controlled by home computer. Steve Babcock (VE6WZ) in Calgary operates such a site for medium-wave band reception, emphasizing to those wanting to set up a remote site to use a remote desktop application at the remote station — TeamViewer or AnyDesk are two such programs — to control their computer. He claims that the most efficient method is to set up a computer at the remote station, connect an SDR radio as you may at home, yet control that computer remotely through the software from your home.

Alternatively, if you don't have the funding, know-how, and property on which to build a remote site, you can take the approach of Northern Ireland-based Jordan Heyburn, who was struggling with severe interference at home, and packed up his Perseus radio, SDR, and a laptop and shipped it to fellow DXer Jari Lehtinen. The two share a remote site in southern Finland, about 80 mi. (130 km.) outside the capital of Helsinki, Jordan controlling his equipment with remote access software just as Steve suggests. Assisting Jari in costs at the site, including three shared beverage antennas, the arrangement allows Jordan to enjoy his hobby and catch amazing stations from a favorable location, all while doing so at a minimal cost.

Similarly, on the TV side of the hobby, Steve Rich and Mike Glass operate two such sites in rural Illinois, both of which collect great results, even when suitable conditions aren't forecasted. Their sites, far from their homes near Indianapolis, are not especially expensive to build or operate, especially with Mike, a retired mechanical engineer, being able to connect all the necessary equipment to a computer to allow full control of the operation remotely via the Internet. Speaking on the advantages that such remote sites offer, Steve exclaimed that "DXing from these two remote sites compared to DXing from my house at five miles from the local antenna farm has been the difference between night and day!" Whether the site is small or expansive or for personal use or joint DXing community use, remote sites can benefit your own DXing and that of the community as a whole.

b.) Note parallel stations or networks. Become familiar with the stations you are likely to hear, including networks and parallel frequencies. Once you've chosen your ideal site, be sure to note parallel stations or networks ahead of time. Write them down and keep them handy, whether preparing a list from an online resource or even a station guide similar to that of the late Bruce Elving's *FM Atlas*. This can save you a great deal of time in a session because when you hear a station that's obviously a network, whether a state public radio network or a nationally-affiliated network like CBC or NPR, knowing which stations should be running parallel to one another can greatly increase the chance for easy station identification and will save more time than you'd expect, especially in the non-commercial part of the band. In this case, you can quickly seek out parallel content on other channels, sometimes quickly logging a whole series of stations. Jurgen Bartels, a DXer from northern Germany, uses radio presets to save each radio network, which can be done in advance of a listening session or in real-time as you tune them. This provides a quick and easy comparison to match networks on the spot. Once you've been rained out unexpectedly in the middle of a session, you will see in hindsight the time saved with this knowledge can be a great benefit to boost your success.

c.) Plan for cellphone signal disruptions. Cellphone signals aren't always guaranteed while mobile. In fact, more than half of my own sites lack any signal whatsoever. Coastal cell coverage can be especially prone to interference with local signals being blocked in favor of ones from distant jurisdictions. In fact, that's often a by-product of the same marine temperature inversions you're using to DX distant stations over water. Such distant phone signals can be successfully received, but are entirely inoperable for data purposes. My phone even sometimes displays a different time zone due to the signal arriving from across a large body of water. At some of my mobile sites, my service provider regularly "welcomes" me to Canada (or the United States, depending on which side I am on), even

though I'm a hundred miles or more away. And that's a costly privilege with international roaming fees. This also means that you can be flying blind — if you want to compare what you're hearing on your radio to what's on a particular station website, you might find yourself without a signal, or with an inoperative station database, therefore unable to compare until long after the song log has disappeared. It means that online station database you quickly utilize at home no longer works. That town name you heard on that station that you're unsure of? Better take out that paper map because you're bound to find the same town name in two states, each with a potentially matching station, once you've returned to the comfort of your own home or a working Internet connection. Know which chain stores are in which states, provinces, or regions. Measures like these can save considerable time as you're moving from channel to channel. Know your geography, be prepared, and expect to DX off the grid if you're at an unfamiliar site.

14. Record your sessions if necessary. While I don't always make a habit of it, there are those times when recording your listening session can be highly useful. Large, bulky headphones, as opposed to simple earphones, can be beneficial, especially on a windy day when outside noise can overwhelm relatively weak signals, obscuring station IDs, information that you may not be able to recover. But a simple recorder — even a voice recorder hooked up via a splitter to your portable radio — is like an insurance policy in case you miss details such as phone numbers or station slogans, or in the event that signals are weak and you need to listen carefully for clues. Recording your sessions offers permanent backup and can protect your memories or capture the audio of that unexpected station you never thought you'd hear, offering proof of your accomplishments. While sifting through hours of audio can be time consuming, you can always delete what you don't want to keep.

15. Keep track of details. Have you ever heard a station and figured it was an easy ID only to later find that it actually wasn't? Maybe there were two stations within earshot on the same frequency with the same name and format and you simply didn't write down enough information while listening. Suddenly, you wished you had.

Write down phone numbers you hear or, at least, area codes. Jot down business names; even those can pull up no results upon searching, can have numerous locations in multiple markets, have variations in spelling, or be easily misheard. Mark the time of reception every 30 minutes or more as well as the start and end times of your session. If starting at one end of the band and continuously working up or down in order of frequency, noting the passing of time can be extremely beneficial when encountering stations that air differing blocks of programming, whether it be college stations with various genres, public radio stations, or others. You'll find that the station you heard running one public radio program isn't so helpful when three stations air it in a short time block, all of them at slightly different times. That jazz programming could have been the full-time jazz station or perhaps the college station running a half-hour block of jazz before diverting to death metal. That half hour can be the difference between a station ID and a mystery that lasts forever. Simply put, you probably won't hear an ID for every station. Use what you hear wisely to extrapolate the information required for your ID when one doesn't present itself.

As you log, draw an arrow or other notation beside stations that you wish to revisit for IDs or further information. With 102 frequencies on the FM dial — more than 200 frequencies in some countries! — and even a good handful on the AM dial, it's easy to forget a station you couldn't quite figure out, no matter how sure you were you would come back to it.

Don't forget that in the age of crossover songs — for example, those that may be sung by country artists but show up on radio stations airing a drastically different format — it can be easy to misidentify stations based on incomplete or misleading information. What may seem a simple match might lead to

complete and utter confusion when learning there is no such station with the format you expected. When compiling a bandscan at one of my mobile sites, I'll generally run through the entire band one frequency at a time over the course of about two hours, and then repeat this a second time to compare the initial results. This helps me avoid errors which can be easy to make given the wide variety of content broadcasted on hundreds of stations in any given location.

Lastly, keep track of general weather conditions at your location as this information might come in handy at a later date. Factors such as temperature, wind, high or low pressure, and other details that may be relevant to reception only take a few seconds to log yet can help you figure out patterns affecting future reception and can even benefit the hobby as a whole.

"Be kind to the wildlife you meet, so says the skunk that took a seat beside me for ten minutes as I scanned the dial one night and the owl and bats I often share my space with in sessions after dark at my forested sites."

16. Pay attention to your surroundings. Because you may be in a place that is unfamiliar and perhaps somewhat remote or quiet, you should always be aware of your surroundings. This includes the potential danger of wildlife and other people in your nearby space. Be kind to the wildlife you meet, so says the skunk that took a seat beside me for ten minutes as I scanned the dial one night and the owl and bats I often share my space with in sessions after dark at my forested sites. Watch for people who may be observing you beyond the point of simple curiosity — a possible sign that you may be unwelcome or unsafe in a particular location. As rare as it may seem, I've encountered this enough times over the years to have stories of police searches and interrogations while simply trying to enjoy a night tuning the dial, though I have also had harmless encounters such as being watched from a tent by a homeless man camping out at my radio site. Don't forget to lock up and hide valuable equipment from view if you leave your vehicle for even a minute or two. Also, be vigilant for any signs of inclement weather. Have I thoughtlessly aimed my antenna at the sky with lightning nearby? You bet I have. Don't be me.

17. Manage your time well. DXing in the dark can be difficult. But it's not the only reason you should manage your time well. Assume the time for a full listening session to be a couple hours; it usually takes me 2 to 5 hours to make my way through the entire FM band and identify all the stations being received. Inclement weather is always possible when you least expect or prepare for it, so give yourself enough time and plan for the unplanned. Consider that, as sunset approaches, radio conditions often naturally change both on AM and FM. Depending on the goals you've set for your listening session, this may work for you or against you.

a.) Time is of special importance on the AM band. While the arrival of dusk means little more than nighttime enhancement or improved reception for most FM listeners, it's of special importance to those who browse the AM band. For those living in Asia or Europe, stations typically maintain the same power throughout the day, no matter atmospheric conditions. Due to the fashion in which AM signals propagate via skywave after dark, these signals can have a very far reach come nightfall. However, in North America, the power of smaller local stations is often required to be reduced in favor of "clear-channel stations," frequencies designated in 1941 as having special protection from interference at night with a history even dating back to 1928, or merely having the goal of protecting those stations that existed first. Stations not meeting clear-channel status are licensed to use both daytime and nighttime parameters and are required to power down at certain times of the evening in relation to sunset at their particular location.

As DXers Jim Renfrew and Tim Hall note, the somewhat complicated arrangement has each hour divided into 15-minute increments for station sign-off, power down, and antenna pattern changes. Each month, each station is assigned a sunrise and sunset time, rounded to the nearest quarter hour, based on the sunrise and sunset times at that location in the middle of each month. A station based where the sun sets at 5:08 p.m. on the 15th of the month would be required to power down to their lower nighttime parameters at 5:15 p.m. throughout that entire month. As AM stations are best received post-sunset, the 7 minutes between sunset and that station's nightly power reduction can be the most valuable chance at reception, especially as the same repeats itself across the country from east to west for a few hours each evening. In the spring and fall months, especially in the higher latitudes where the sunrise and sunset times change the most from one day to the next, the discrepancy between the actual time and the FCC-assigned time can be 15 to 20 minutes, creating a disadvantage for the DXer at one end of the month and an advantage at the other end of the month. However, as Douglas Smith adds, "one should consider that long-haul AM conditions don't suddenly switch on at sunset and switch back off at sunrise," that the increase and decrease in propagation over this period is gradual. Those who are especially familiar with these rules can choose ideal locations in which to listen and also choose which time of month to do so for their maximum benefit, especially with a station target list at hand.

On occasion, some stations forget to power down at their designated time, remaining on daytime power for an additional 15 or 30 minutes — sometimes all night — allowing for an extra window of reception. On the other hand, many stations are authorized to boost their power — a value higher than allowed at night yet lower than allowed during the day — at 6 a.m. every day. This is a static time no matter the time of the actual sunrise at the station's transmitting site and can allow for increased reception similar to that at sunset.

Gary proceeds to add that results can be augmented by scheduling listening sessions around sunrise on the west coast or sunset on the east coast from September until December, the best time of the year to listen. Enhancement propagation during those two times on their respective coasts continue for much longer periods than do inland areas.

An understanding of these time regulations along with utilizing helpful charts, such as those outlining relevant sunrise and sunrise times, which are put together by fellow hobbyists and club publications such as the NRC AM Radio Log or IRCA, can go a long way to maximizing your potential and assisting in choosing an ideal listening location if AM radio is your interest.

b.) Look for target stations first. In case the weather takes a turn for the worse or a sudden change in atmospheric conditions occurs, looking for target stations before all else can be of great benefit. On FM, always start at the bottom of the band no matter how tempting it may be to avoid the non-commercial frequencies. Establishing a routine will keep your tuning organized. If an E-skip opening erupts halfway through your session while you're working a tropo opening, it's best to find out sooner rather than later that E-skip starts at the bottom of the band, first affecting those stations you decided to leave for later.

Though it's less common today than it was in the past, a small number of stations on both FM and AM do still turn off for the night. In mainland China, even until the mid-2010s, numerous FM stations would sign off entirely for the night while others would run filler music overnight — some with occasional IDs and many without. Once a station has turned off or ceased broadcasting content for the night, the chance for an ID declines exponentially. If you have a list of targets, no matter the band, know which stations disappear at which hours and concentrate on those frequencies earlier rather than later.

c.) Plan around seasonal content. Different regions of the world may have their own seasonal content to work around. In the United States, high school football season often starts in late August and continues into November. These games are typically played on Friday nights and are common to hear on the radio, especially in rural areas on AM and FM alike. With limited local content aside from the game itself, stations airing this content are known to be notoriously difficult to ID — albeit not impossible — without some luck. Avoiding game time can maximize your potential and make for an easier listening experience. On the AM side though, many stations are known to operate at full power during game broadcasts as opposed to their required lower nighttime power, benefiting those who DX that band assuming the station's location can be identified. As high school football season is wrapping up, numerous stations in the United States turn to a different type of seasonal content: full-time Christmas music. Beginning in late October and November and breaking from expected formats, these stations are far easier to identify than those broadcasting games.

d.) Monitor stations prior to arrival. Save time at your chosen location by monitoring stations on your car radio before reaching your site to know what to expect upon arrival. It could be a good chance for some quick IDs before ever turning your portable radio on, especially in the case that your car radio supports RDS (or RDBS, the North American equivalent), which helps to quickly identify stations, while your portable might not. Saul reported hearing an FM station from Arkansas on his car radio while parking at his site north of Toronto. By the time he had set up his equipment 10 minutes later, there was nothing to be heard. At over 1,000 mi. (1,600 km.), the station remains his farthest tropo catch even decades later.

18. Never assume local stations can't be conquered. Simply put, when the location is right and conditions are good, all but the most local signals can be defeated. Even if a station is throwing 50 kilowatts in your direction from the other side of town, it can be nulled and replaced even momentarily by something more distant, especially when you use your terrain to create a local null. A large body of water can duplicate that effect even without the terrain. Wherever you are, always make a great effort, especially if there are other full-power stations within earshot. You might be pleasantly surprised at what you might hear with your persistence, even with a portable radio! If worse comes to worst, only a couple minutes have been lost as a result of your effort.

"Legs getting tired? Find a nearby tree to relax against while tuning. Lacking enough height to find the signals you want? Climb a tree. Bumped into a 100-foot metal fence blocking your path? Press your antenna against that metal fence to see if it might add another 100 feet of metal to your antenna and provide a valuable signal boost."

19. Be creative. If you're DXing in the wilderness, there are things you're used to at home that you might not have outdoors. Legs getting tired? Find a nearby tree to relax against while tuning. Lacking enough height to find the signals you want? Climb a tree. Bumped into a 100-foot metal fence blocking your path? Press your antenna against that metal fence to see if it might add another 100 feet of metal to your antenna and provide a valuable signal boost. If you have a car radio, use it to your advantage. While many portables can be great at finding hidden signals in tiny spaces of air and in the null of nearby stations, car radios can often use highly directional antennas with more signal sensitivity needed for a variety of rural and urban environments. Car radios can often find weak signals your portable simply can't, though at the same time your portable can undoubtedly track down many signals your stationary car radio cannot.

Sometimes, good equipment is homebrew. Saul has a decent-quality car radio built into a wooden box sitting on his passenger car seat and connected to a homemade dipole mounted on top of an extendable pole he can hold outside his driver's side window. He uses a screw-on foam and metal squeegee and elastics to hold the dipole in place atop the pole, which can then be turned manually by rotating the pole. While the contraption occasionally attracts unwanted attention, it adds additional height and can be used both inside and outside the car. And let's not forget Gary, who invented his own AM antenna to suit his needs. Use what you have and make it your own.

Beyond your site

20. Share your hobby with like-minded individuals. As much as DXing is a solitary hobby, and a fair number of hobbyists are introverts who prefer their sometimes-hermit lifestyle, plenty are social, especially when meeting up with others who share their interests. Attend a DXing get-together event or convention where you can share ideas and even meet people who work as broadcasters or station engineers. Find DXers whose interests match with yours and schedule a joint mobile outing to explore the bands together, comparing results in real-time, albeit with separate radios. Moreover, a large number of people in the hobby share other common interests, including geographical hobbies such as collecting maps, photographing highway signs, and even keeping track of states and/or counties they visit. Others have a keen interest in meteorology, looking to better understand the ducting and atmospheric conditions that deliver the signals they so desire to hear.

Conclusion

Whether you're climbing mountains, trekking over sand dunes, climbing trees, standing in the water during a storm, or battling bears for a territorial hold on the perfect listening site, mobile DXing can be an enjoyable and adventurous approach to inject more life into your hobby, challenge yourself, explore the world around you, and create new memories. If you've never undertaken such an endeavor, give it some consideration, using the aforementioned tips as initial guidance. Mobile DXing can be the adventure of a lifetime.

DXers featured in this article, many who personally contributed to the content, include: Richard Allen, Steve Babcock, Jurgen Bartels, Dr. John Bryant, Saul Chernos, Mark Connelly, Gary DeBock, Mark Durenberger, Bruce Elving, John Faulkner, Mike Glass, Tim Hall, Nick Hall-Patch, Jon Harder, William Hepburn, Jordan Heyburn, Andrew Knafel, Jari Lehtinen, Mika Mäkeläinen, Satoshi Miyauchi, Jim Renfrew, Sheldon Remington, Steve Rich, Mike Shafer, Douglas Smith, Doug Speheger, and Paul B. Walker Jr.

This article was edited by Saul Chernos, a Canadian freelance journalist with decades of experience as an AM-FM DXer. The DX pursuits of Chris Kadlec can be found in further detail at www.chriskadlec.com.

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