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I Will Survive 2012

Part Two...The Solution

What to Do?

Surviving the Future

In preparing for what is to come, it is important to understand that you won't necessarily be able to immediately accept the horror of what you might have to face. This is completely normal.

Those who work through major disasters, in fields and scenarios as diverse as such as Iraq, or Hurricane Katrina, talk about 5 stages of catastrophism – this describes a process whereby people gradually come to terms with events that are beyond our normal experience, and at first, beyond comprehension. Accepting that people have to go through this process when dealing with these events has become one of the key parts of scenario based catastrophic planning.

FEMA (The Federal Emergency Management Agency) has learned the lessons from Katrina to develop catastrophic planning across key state and local jurisdictions in the USA.

There are now hurricane plans for Hawaii, two earthquake plans for California (North and South), a New Madrid Earthquake plan for Missouri, Arkansas, Tennessee and the surrounding states, and a hurricane plan for Florida.

What is particularly relevant about this for individuals planning their own response to a possible 2012 meltdown is the process that new participants go through as they are introduced to the details of the plans, and the horrors that are envisaged.

2012 will hit with a force that is greater than anything that has been seen before. How will you react? What can you expect to feel as you think about a catastrophe of this magnitude?

By thinking about this now, you will dramatically increase your chances of surviving what comes. The stages of coming to terms with this event are as follows:

The **first stage** for anyone but the most wide-eyed believer is pure and simple disbelief. This is a catastrophe so big that we typically can't believe it could ever happen.

The **second stage** is to start challenging the assumptions. How can that be possible? Surely a planet couldn't have an orbit like that? A super volcano under Yellowstone couldn't really threaten all of America, could it? Maybe solar flares won't cause that much damage?

The answers to these questions are, of course, that we can't be certain of these details – maybe Yellowstone will only partially erupt – but we are fairly certain that these things will happen.

The **third stage** is resignation. Your brain falls into a state of exhaustion from trying to fight these assumptions. You read a book like this and feel overwhelmed. How are you going to survive? Solar flares? Mass chaos? All the things that we rely on gone or disrupted? Your thoughts run along lines like "I have no idea how I'm going to be able to do this."

Fortunately the **fourth stage** sees you waken from your torpor with a burst of energy – you are able to begin focusing on some of the small and extraneous things you need to do. You resolve to buy the best solar powered flashlight you can, and start busily searching the Internet as though your very survival will depend on finding that one item.

Finally you reach the **fifth stage** – this is where the serious planning and preparation can begin.

You start to see the bigger picture. You see your part is in what's up and coming, this is where you can begin to develop a detailed plan that enables you and your family to have the skills, equipment, and mental preparation you need to survive what is to come.

How long does it take to move through these five stages to the point where you are ready to meaningfully move forwards? For some – like you, hopefully – moving through the five stages can take a matter of days. For the unwilling, the overly skeptical, those who continue to ignore the signs, even as they loom large, the process can last months.

The Commercial Answer:

For many of us, the simplest way to deal with this issue is the way we deal with everything else these days – throw money at it. Throwing money at it is easy.

You get a builder to convert your basement into a bomb proof bunker, you stockpile food and water, you buy the biggest, baddest 4X4 you can afford, then you sit back and wait for Planet X to appear – bring it on, you're ready.

It's true that your wife and kids might think you're going through your second childhood, but it's worth it.

The problem is that none of that will be worth anything unless you are ready mentally to survive.

Programming your brain for survival:

Once you have accepted the need for action, once you have moved through the five stages to reach the fifth and final stage, you are ready to take some meaningful action to prepare yourself. Great. The first thing to do is sit down and do nothing!

That may not sound like the best way to move forwards, but it is actually a vital part of what you have to do.

The reality of any dangerous situation, of any disaster or catastrophe is that when events begin to unfold, events on the ground dictate the rules. And while that doesn't mean that you shouldn't make preparations, it does mean that you have to be prepared to react and adapt.

Preparation and planning are great, but if that's all you have, the first time something happens that you weren't prepared for – you're carefully built nuclear proof bunker floods – you are in trouble. Hence the need to sit down.

Of course, you aren't simply going to sit. You are also going to play out in your mind as many possible scenarios as you can, and figure out how you would react.

Surviving a catastrophe such as 2012 involves identifying as many threats and threat situations as possible, and visualizing yourself dealing with them. This is exactly what the military does when it plays out war games scenarios.

There are two reasons for doing this. One is obviously giving you the chance to explore the different options and your response to each of them. What will you do if there is a huge earthquake or flood when your children are at school? Even if you have the best prepared safe haven possible, it's quite possible that when all hell breaks loose, your family will be spread across several different locations – how will you all get together and arrive safely at your prepared haven?

The other part of playing out these scenarios is that you are training your brain – training it in a skill that will be vital in the years ahead. By practicing dealing with these different hypothetical scenarios, you are teaching your brain how to think strategically, deal with different options, analyze different threats, and make good decisions.

In doing these visualizations you have to be honest with yourself, about both your emotions and what you can and cannot do. You are not Rambo, Tarzan or Superman – you won't swing from tree to tree, dispatch any intruders with a flick of your knife, and scoop your family up in your bulging biceps.

What you will need to do is rapidly gather all the important information, be aware of what you know and what you don't know, and move decisively.

The more you see yourself dealing decisively and effectively with whatever scenarios you visualize, the more likely it is that you will do so when the real thing happens.

Our brains are highly programmable – if we think it, repeat it see it over and over again, we can make it happen. It's how Olympic athletes train for major events and it's how hypnotherapists get their clients to lose weight, quit smoking and achieve their goals.

The key skill you need to develop is situational awareness. Situational awareness is a three step process that involves asking smart questions as events unfold:

- What is happening and why?
- What will happen next?
- What are my options?

We aren't used to doing this – we live in a blame culture where we are always looking for someone else to blame, someone else to pick up the tab:

“Had an accident at work? Call us! We'll GET you some money!”

This is not the time to be looking for someone to blame. This is the moment to be keeping a level head and taking responsibility for what you are going to do. And one of the best things that you can do is trust your intuition.

Intuition:

Intuition is an interesting thing. We are often taught that we should not trust intuition, that we should be cold and calculating and analytical. However, being cold and calculating and analytical does not use all of your brain – it uses the conscious part of your brain only, and rather like

the tip of an iceberg, the conscious part is only a small percentage of the whole brain.

When you use intuition, however you also engage the subconscious part of your brain, the hidden 90%. The subconscious mind is incredibly powerful – it controls probably 90% of what you do on an everyday basis.

Allowing it to be a part of your decision making process in emergency situations ensures that all the hidden parts of your mind can influence your decisions.

This can include skills such as forming impressions of other people – are they safe or dangerous – reading signs in the weather, gathering information from senses such as smell, a whole host of information gathering and processing that happens without us thinking about it.

Intuition engages your emotions, your rational brain, your senses, all of your mental faculties. Trust it.

Solar Storms:

It is likely that one of the biggest dangers we have to cope with as a result of Planet X will be increasing solar activity. If, as the experts predict, Planet X does travel between the Earth and the Sun, it will undoubtedly stir up a solar maelstrom.

A huge solar storm – often described as a Perfect Solar Storm – could be devastating to life on Earth. At the very least it will cause dramatic disruptions to our industrial civilizations.

There are two types of solar activity that could threaten us, Solar Flares and Coronal Mass Ejections (CMEs).

While they both have the same cause – rapid, large scale changes in the Sun's magnetic field – they can occur either together or independently.

Coronal Mass Ejections (CMEs)

A CME is a giant cloud of heated, electrified plasma that is ejected from the Sun's lower atmosphere. CMEs will mostly affect satellites and communications, but could, if powerful enough, penetrate the magnetic field, causing violent weather and radiation storms.

One possible effect is a series of auroras – like the Aurora Borealis – extending much further south. A more serious consequence would be if CMEs hit the Earth, as they did in September 1859.

On this occasion a massive CME overwhelmed the Earth's magnetic field, short circuiting telegraph lines and causing several fires. Such a storm in our modern electronic age would cause havoc to powergrids, TVs, computers, cars, homes, offices – everything connected to our massive electronic network.

Given the powerful magnetic charge contained within CMEs, it's also possible that a large CME could re-align the Earth's magnetic polarity – a regular event, and one that is currently overdue – with further devastating effects on our electronic and magnetic equipment.

Solar Flares:

Solar Flares are a far more deadly threat than CMEs. Solar Flares move way faster than CMEs – they travel at the speed of light – and land with devastating impact.

Solar Flares are classified by severity, A, B, C, M, and X.

X class solar flares are the most powerful, and are ranked from X1 – X20. However, in 2001 a solar flare was recorded that was so powerful that it was rated as somewhere between X22 and X40. Fortunately, it was directed away from Earth. A solar flare of that magnitude would devastate life on Earth.

Solar flares can be thrown out in every direction from the sun – our concern is those that are directed at, or at least towards, the Earth.

Solar storms bring with them several different types of threats:

- **Gamma Radiation:** This is a deadly combination of short wavelength and high energy content. They cause serious damage when absorbed by living cells. Highly carcinogenic, affecting the thyroid and reproductive organs in particular, but much more powerful and dangerous than X-Rays.
- **X-Ray Radiation:** This is radiation within the X bandwidth – whether created by humans or the cosmos. It is destructive to any biological organism, causing DNA damage and mutations. Highly carcinogenic, affecting the thyroid and reproductive organs in particular.

- UV Radiation: This is the most dangerous form of ultraviolet light, and it can result in both acute and chronic damage to the skin, eyes, and immune system. High doses can cause severe burns.
- EMP – Elector Magnetic Pulse: A short burst of electromagnetic energy across several bandwidths. This won't harm us, but will devastate electrical devices.
- Magnetic Storm: These occur when particles form a CME penetrate the Earth's magnetic shield.

So what can you do against these massive natural forces? The key is finding a suitable shelter that will shield you from these attacks. The greater the thickness of material that you can get between you and them, the better.

Solar Storm Shelters:

When solar storms strike, or are imminent, you need to seek shelter as soon as possible. The rules are as follows:

Seek shelter immediately – even a few minutes exposure to some of these horrors can be devastating to you

Find the thickest protection possible

Seek shelter from above – solar storms move in straight lines, and will rain down from above

So what constitutes an effective shelter? Shelters can come in all shapes and sizes. At home you can look to seek shelter in:

- Cellars or basements
- Safe rooms
- Storm shelters

If you are out and about, look for structures like:

- Underground parking garages
- Tunnels (pedestrian or vehicle)
- The Underground
- Basements
- Sewage pipes and tunnels

For those out in the countryside, options include:

- Mines
- Caves
- Tunnels of any kind
- Rocky overhangs

Within eight minutes of a solar eruption, unseen particles will be blasting through your body.

As with other issues of preparedness, you need to be thinking now about where you will go. Start scouting your local area for places that you can get to quickly that will afford you this type of shelter.

Cell Phones and Safe Zones

One tool you can use right now to help you find safe zones is your cell phone (mobile phone).

You are probably aware of areas where your reception fades, and the little 'reception' bars on your phone start to drop? These are the places to look for – if there is a particular parking deck, for example, where you can never get reception that is a good place to seek shelter from a solar storm. No reception now equals any solar nasties in 2012!

Once you have established general areas where reception gets poor, you need to get on foot and find the spot with the very worst reception – that will be the safest place to be when a solar storm starts raining its toxic brew down on us from above.

Typically this will be a deep corner – great!

Making your own shelter:

In addition to having a number of places around your area where you can go if a solar storm strikes when you're out, you will also need to have an area in your house that provides protection.

The only thing that counts when you are seeking protection from a solar storm is how much material is over your head. The half value thickness of common materials is as follows:

- Soft wood: 516 mm
- Iron or steel: 18 mm
- Brick: 51 mm
- Concrete: 56 mm
- Dirt: 84 mm

This would be a minimum – the more the better.

You will also need to think about how much space you have, and the number of people you will need to fit in your solar storm shelter. Up to 4 adults would need a space at least 4' X 6' (1.22 m X 1.83 m).

Depending where you live, you may already have an ideal solar shelter – if you live in a large apartment building and are near the ground, you will have huge amounts of concrete steel and wood between you and any solar storm.

Again, such buildings often have a basement, which would be the ultimate solar storm shelter.

Building one yourself needn't cost much money or attract much attention. If you don't have a basement or cellar, the best option is probably to buy an outdoor shed, and adapt it to provide safe shelter from solar storms.

Converting a standard shed to a solar storm is relatively easy. As solar damage will come directly from above, this is the area that you need to focus on. The trick is how much solar insulation can you get above you?

The simplest way to do this is to buy some high strength steel shelving – the top rack needs to be strong sheet steel.

Construct the steel shelving in your shed, with the top shelf high enough that you can get in underneath it and with space above it to stack insulation material – you will need a minimum of 2 feet (0.61m) of clearance above the top shelf. To provide adequate solar protection you will fill this space with sand bags – your local building supply shop can deliver as many bags of washed sand as you need to fill this whole space to a depth of at least 2 feet.

Stack the bags on the top shelf, criss-crossed to ensure that there are no gaps. Typically this will take three or four layers of sand bags to provide the desired depth of insulation.

The other material you will need is lots of tin foil. Completely coat the roof of your shelter with several layers of tin foil, held in place with duct tape. If you don't want to attract attention, you can do this on the inside of your shelter.

Finally, stock your shelter with food and water, and somewhere to go to the toilet – a large bucket will do, though something with a top that seals will be the best choice.

You might also want to consider something to keep you entertained – some books or games. But remember, electrical devices such as radios won't operate during a solar storm!

Protecting your Electronics:

We live in an electronic world, from computers to radios, pacemakers to GPS navigation. It's great, convenient, fun, saves lives – and it's all going to be at risk when the first solar storm hits.

So how do you protect your electrical equipment during solar storms? As noted earlier, the parts of the solar storm that affect electronics are magnetic field disturbances, and it is this we have to protect against.

The first line of protection is to remove the power source from these devices:

- Remove all batteries from battery-operated devices such as cell phones, radios, laptops, etc.
- Turn off your power – go to your breaker box and turn off all the individual breakers, as well as the main power switch
- Unplug every mains electrical device. Also unplug all antennas.

Be aware also that solar storms could potentially disrupt the computer chips that control your car – although they are designed to survive harsh electromagnetic conditions, they are still likely to fail in a powerful solar storm.

Secondly, you need to 'cage' key electronic items. This is easier than it sounds. The most effective caging material we possess is tin foil. Carry some folded tin foil with you at all times, and when a solar storm is imminent, remove the battery from your cell phone, and wrap the phone, the battery, and all your credit cards in foil.

It is not the best protection possible, but it is easy and convenient and should be enough.

For the home, you can make even more effective protective cages using the humble cake tin.

As long as your cake tin is made from magnetic material (iron, copper, tin, nickel etc) it will be perfect.

To make a protective cage for your small electronics, line them with tin foil, place your small electronics inside, and be sure that the seal is airtight.

For bigger items, you can track down a metal trash can (rubbish bin). As long as the edges are tight, and sealed with tin foil, these types of improvised cages should provide good protection for your valuable electronics.

Plan now to cope with solar storms, and you won't be caught out when the time comes.

Survival:

Survival in any situation relies upon planning in advance, and reacting appropriately as situations unfold. The army uses the acronym SURVIVAL to remind soldiers what you have to do to survive.

S - Size up the Situation

Sizing up the situation involves a number of factors:

Size up Your Surroundings: Where are you and what is going on around you.

Size up Your Physical Condition: Are you injured, sick, hungry, tired, or in need of water? When you are scared it is easy to forget the simple things like

Looking after any wounds you receive, drinking plenty of water to prevent dehydration, or putting on extra clothes to prevent hypothermia.

Size Up Your Equipment: What equipment or resources do you have that will help you deal with the current situation?

U - Use All Your Senses, Undue Haste Makes Waste

As far as is possible, take your time. Don't make rushed decisions – it's easy to make a wrong move when you react quickly, or without thinking or planning.

R - Remember Where You Are

Later on we will discuss navigation skills. It's crucial that you always know where you are – thus you need to always have a map and compass and know how to use them.

V - Vanquish Fear and Panic

Negative emotions such as fear and panic can be your greatest enemies. These sorts of emotions can destroy your ability to make intelligent decisions, causing you to react to your feelings and imagination instead. They are also very draining both physically and emotionally.

I - Improvise

Learn to improvise. Just because you no longer have everything perfectly in place doesn't mean you have to give up. You can take a tool designed for one purpose and use it for hundreds of others. You can use what nature provides you – rocks, sticks, and so on, and learn to use them for different needs.

V - Value Living

The will to live is crucial. We all arrive kicking and screaming into the world. Be determined to go out the same way. Be stubborn and unreasonable when it increases your chances or survival. Value life – your own and those around you.

A - Act Like a Native

Humans have spent centuries protecting themselves from their natural environment. Now it's time to turn back the clock. Look around at what the wildlife in the area does to survive. What do they eat? How do they get their food? Where do they go for water? How and where do they seek shelter?

L - Learn Basic Skills and Live by Your Wits

One for now, one for later. Firstly, take the time now, while you can, to learn basic survival skills. This book is full of them, but so are plenty of other places – other books, the internet, TV shows. Make it your mission to learn as much as possible by learning basic skills **now**.

Later, these skills will stand you in good stead, allowing you to survive and live by your wits.

Think Survival

What do we mean by think survival? It means beginning to develop a survival pattern that encourages you to think about what you have to do to survive. Thinking survival means that you automatically think about issues like food, water, shelter, fire, and first aid. These should become second nature to you, something that you do automatically in any situation – you think survival.

So in a cold environment, which is entirely possible if the Gulf Stream changes direction, or a super volcano fills the sky with smoke and ash, your first need would be a *fire* to get warm, followed by a *shelter* to protect you from the cold, wind, and rain, water collectors to gather fresh water, and traps or snares to get *food*. At all times you need to be aware of *first aid* to maintain health.

In fact, *first aid* should be a priority wherever you are. If unattended, even the most minor of injuries or conditions can turn into major problems.

By always thinking about survival, you can dramatically increase your chances of surviving a variety of situations. In fact, what you think, and how you think, are at the very heart of survival. Let's look at the Psychology of Survival.

The Psychology Of Survival

It's very easy to focus on the physical, skill base aspects of survival and ignore the all-important mental aspect.

Of course, having the knowledge and skills to build shelters, get food, make fires, and travel without the aid of standard navigational devices are vital to living successfully through a survival situation.

However, before you can even start to apply these vital skills you have to have the mental attitude of survival, the sheer bloody-minded will to survive.

In any survival environment you will face many stresses that can affect your mental state. You will face stresses and situations that can change you from a confident, skilled survivor into an indecisive, ineffective wreck. Let's look at those stresses to see how you can learn to cope with them and develop the Psychology of Survival.

What is Stress?

It often surprises people to learn that stress is not actually a bad thing per se. It is not a disease, not something that you need to cure and eliminate.

We all experience stress – it is simply our reaction to pressure, to deadlines, to having to make tough decisions. It is how we react physically, mentally, emotionally, and spiritually to what life throws up at us.

In fact, stress can have many positive benefits. The right kind of stress offers us challenges, motivates and inspires us to perform at our best. It helps us to show our adaptability and flexibility, it teaches us how to handle pressure, and it can help to show us what is important to us.

In everyday life we need some stress in our lives, but too much.

The problem is that when we have too much stress, it overloads our ability to cope with it. Too much stress takes a toll on people, causing an uncomfortable tension that ultimately leads to breakdown. Some of the signs of too much stress include:

- Problems with decision-making
- Forgetfulness

Reduced energy levels.
Increased carelessness.
Making frequent mistakes.
Constantly worrying about things.
Angry outbursts
Negative thoughts, often involving death or suicide.
Withdrawing from other people.
Hiding or escaping from responsibilities.

Stress can therefore be either constructive or destructive. It can encourage you to succeed, or discourage you and lead to failure.

It can drive you forwards or stop you dead in your tracks.

It can provide the drive and impetus to make life meaningful, or overload you and make life seem meaningless.

In a survival situation it can encourage you to operate at maximum efficiency, or it can cause you to panic and forget all your training.

The key to survival is thus going to be your ability to manage the inevitable stresses that will come your way, to work with the stresses that you encounter instead of letting the stresses work on you.

Stressors

So what causes stress? By definition, anything that causes stress is called a stressor.

Stressors are thus the cause of the stress response, and will come when we least expect them – often occurring simultaneously.

When we experience stress we react – the classic “fight or flight” response. This is a signal to the body to be prepared to act. Therefore we will experience a series of physical changes to ready us for action. These include:

The release of stored fuel (sugar and fats) to provide quick energy
Increase in breathing to supply more oxygen to the blood and the
brain

Increased muscle tension to ready us for action

Blood clotting mechanisms are activated to reduce the bleeding from
cuts

Heart rate and blood pressure rise to pump more blood to the
muscles

Stomach activity shuts down to save precious resources

All of this gets us ready to react immediately to potential dangers.

However, this is a short-term state, not designed to be maintained for any period of time. This is why stress can be such a problem in modern society – many of our stressors can continue for long periods of time without ever requiring us to take the type of immediate physical action for which our stress response prepares us.

This can also be a problem in a survival situation, when stressors can arrive quickly, one after another, progressively adding up and depleting our ability to respond to each of them appropriately.

Over time, the body's resistance to stress wears down – if at the same time, the sources of stress continue to pile up we eventually reach a state of exhaustion.

How do we avoid this? By learning anticipate stress, and by developing strategies to cope with it. So what are the most likely sources of stress in a survival situation?

Injury, Illness, or Death

Injury, illness, and death are all very real possibilities in a survival situation, and are probably the most stressful situations you will encounter.

Surviving in an unfamiliar environment means living in a state in which you could die from hostile action, from an accident, or from eating something poisonous.

Injury or illness create their own problems because they limit your ability to move around, to find food and water, to build or find shelter, and Perhaps even your ability to defend yourself.

Uncertainty and Lack of Control

This is a problem even in everyday life, but in a survival situation it can be magnified tenfold because it can easily seem as though there is nowhere that you are safe or able to relax.

It can be extremely stressful operating on limited information, in a setting where you have limited – or indeed no control – of your surroundings and environment.

The Environment

It is quite likely that in any 2012 survival situation the environment will be a formidable obstacle to survival.

The environment includes stressors such as heat, cold, rain, winds, floods, solar flares, radioactive water and food, insects, dangerous animals, and indeed other humans who are living on the ragged edge.

The environment will be both a source of food and protection, and also a potential cause of discomfort, danger, or death.

Hunger and Thirst

Right now, if you're hungry you go to the fridge, if you are thirsty you go to the tap. These are easy, safe, and convenient.

But in a future scenario getting and preserving food and water will be hard work, requiring skills, ingenuity, maybe even bravery. This will inevitably be a huge source of stress, particularly as this situation lingers on.

Fatigue

Survival is hard physical work – in all likelihood much harder than anything you do right now. It is quite likely that the simple act of survival will leave you so fatigued, that simply staying awake is an effort.

Isolation

We'll talk later about how to plan in advance so that members of your family can gather together when danger strikes.

This can be a key element to survival. Being in contact with others also provides a sense of security, gives us additional members of the group to turn to when problems occur, and ultimately a reason to keep living.

Conversely, being alone in survival situations means relying solely on your own resources, and can be a considerable source of stress.

This is by no means a complete list of potential sources of stress, but it should give you some idea of what you might expect. What is important is how you react to these potential stresses – this is a very individual thing, because what is stressful to one person may not be stressful to another.

This will depend on your experiences, your training, your attitude and outlook on life, your physical and mental conditioning, and your natural levels of self-confidence.

So how do people potentially react to stress?

Natural Reactions

Over millions of years of evolution, we have adapted to survive in a variety of situations. We have also become programmed to react in certain ways to stress – not all of them positive. Here are some typical reactions to stress:

Fear

We experience fear when we are in a situation that we believe has the potential to cause us death, injury, or illness. Like stress itself, fear is often seen as a purely negative emotional response to dangerous circumstances.

However, if you talk to someone who regularly faces dangerous situations, like a rock climber or indeed a soldier, they will tell you that fear is what keeps them, alive – it makes them focused, sharp, and aware of their circumstances and the consequences of their actions.

In a survival situation, fear can serve a positive function, encouraging us to be cautious in situations where recklessness could result in injury or death.

The negative side of fear, however, is when it immobilizes us – when we are so scared that we are unable to think clearly or act.

Feeling fear is thus not a sign of weakness, but a positive emotion that – as long as we are able to harness it – can help us to survive in dangerous situations.

We thus have to learn to use our skills and knowledge to increase our confidence and manage our fears, enabling us to react appropriately and positively in fearful situations.

Anxiety

Anxiety is a state we often associate with fear. But whereas fear is a strong, immediate emotion in response to an immediate danger, anxiety is an uneasy, apprehensive feeling we get when faced with potentially dangerous situations.

Again, anxiety can be either positive or negative. When it's used in a positive way, anxiety can push us to act, to take steps or take precautions that can reduce the dangers that threaten our survival.

We can reduce anxiety by performing tasks that will increase our chances of survival – whether it be securing valuable food sources from

potential predators or setting a watch when we think there might be danger in the area.

However, the downside of anxiety is when it becomes overwhelming, eating away at us to the point where we become confused, uncertain, and have difficulty thinking or making good decisions.

Anger and Frustration

Frustration is easy to define – it is what we feel when we are blocked or thwarted in our attempts to reach a goal.

If the goal is survival, then suffering constant setbacks that reduce our chances of survival will lead to feelings of frustration and anger. It is vital that you do not give in to anger or frustration as they will quickly sap your all important will to live.

By the same token, it is inevitable that you will encounter setbacks that things will go wrong – there is so much that is beyond your control. So how do you react when your plans run into trouble?

This will be vital. If you give in to frustration and anger you will make impulsive reactions, behave irrationally, make rash decisions, and even just give up.

However, if you can harness and channel intense emotions like anger and frustration, they can fuel your burning desire to survive, and ensure that you do everything in your power to overcome the inevitable obstacles that you will encounter.

Depression

All humans experience a range of emotions, and thus it's a rare person who does not get sad, at least occasionally. However, if that sadness deepens and persists, you experience depression.

Depression can often follow on from frustration and anger. If you are repeatedly thwarted from reaching your goals, you become frustrated and angry. Channeled properly the anger can help you to succeed (don't get mad, get even!), but if your anger does not help you to succeed, the frustration level can go even higher.

A destructive cycle between anger and frustration can be set up that wears you out physically, emotionally, and mentally. Eventually this can

lead to negative feelings – “There’s nothing I can do – I might as well quit.”

This hopeless, helpless feeling – depression – can sap your energy and your will to survive.

Guilt

Why would you feel guilty? In any situation where some survive and some don’t it is natural to harbor guilty thoughts – Why me? What did I do to deserve to live? This is a natural part of mourning the deaths of others who were less fortunate.

However, if left unchecked it can lead you to question whether you should make the effort to survive. Why not just quit, die like everyone else?

The key to survival is to turn this around. For some people this may be because they believe that they were allowed to live for some greater purpose in life, even if they don’t know what it is.

For others it can be a feeling that they have been fortunate where others weren’t and they therefore owe it to those who weren’t so lucky to take advantage of this opportunity they’ve have been given.

Dealing With Stress

As we have seen, there are a range of emotions, reactions to stress, that you are likely to feel.

Pretty much all of them have positive and negative manifestations, but ultimately they will be determined by, and determine, your will to survive.

Your mission is quite simple – to stay alive. Fear, anxiety, anger, frustration, depression, and guilt are all potential reactions to the many stresses you will face. By anticipating them, by understanding how they can be channeled in a healthy way, you can do much to increase your likelihood of survival.

You can help to prepare yourself by taking to think a little about how you will react in certain situations – this is a key part of developing a *survival attitude*.

Developing a Survival Attitude:

Know Yourself

Who are you? What are your strengths? What are your weaknesses? It's important to have an awareness of how you react in different situations. Are you able to remain calm, take good decisions? Do people turn to you for help when they have problems?

Take the time to discover who you are on the inside, and figure out ways to strengthen your positive qualities and improve the areas that you know might hinder your chances of survival.

Anticipate Your Fears

What scares you? It is foolish to pretend that you have no fears. Start to imagine what you would find scary or difficult in a survival situation.

If you understand and admit to your fears you will be able to train in the skills and issues that are of concern to you.

You cannot eliminate fear – as we have said, it is actually a healthy response to danger – but you can build your skills, and ultimately your confidence in your ability to function despite your fears.

Be Realistic

We are not suggesting that any of this is easy – and neither should you. Realism means making honest appraisals of situations, seeing them as they actually are, not as you would like them to be!

Hopes, fears, expectations, these all need to be based on a realistic assessment of the situation.

If you “hope for the best, but prepare for the worst,” you will be more likely to survive. If there are pleasant surprises you can enjoy them, while other things are difficult, as anticipated, you'll be ready.

Adopt a Positive Attitude

Research shows that a positive attitude is one of the most powerful things you can possess – for example, people with a positive attitude are over 30% less likely to fall ill than those who expect illness.

Similarly, in a dangerous situation, those with a positive attitude, those who expect to survive and see the sun rise again, are far more likely to come up with a solution that keeps them alive.

Choose Life!

Why bother with all of this? Because you want to stay alive. You want you and your family to survive and prosper.

As in any situation, from sports to business to life, having a clear goal, and staying focused on it, will improve your chances of success.

When emotional reactions like depression, guilt, anxiety, anger and frustration come calling – as they inevitably will – remind yourself what is at stake, why you are fighting so hard.

Prepare

Humans have an amazing ability to procrastinate. If, after reading this book, you truly believe that these events might come to pass, begin today to prepare yourself to cope with the rigors of survival – today!

Knowing that you have the skills and training you need to survive in a hostile environment will give you the confidence to actually use them should the need arise.

No one wants this to happen – but if it does, there will be a clear dividing line with those who are ready on one side, and those who have failed to prepare on the other.

Learn Stress Management Techniques

Stress is inevitable. It will certainly assail you if Planet X enters our solar system and wreaks havoc with our environment.

So while you might not be able to control these outside events that threaten your survival, you can take measures to learn how control your response to those circumstances.

Learning stress management techniques is one of the most effective ways to enhance your ability to stay calm and focused when people are depending on you to keep them alive.

Stress management techniques include:

- Relaxation skills
- Time management skills
- Assertiveness skills

Remember, survival will not be down to good luck. It will come from a combination of preparation, skills and positive mental attitude. Let's look now at the planning you can do to be prepared.

Survival Planning

Planning is something that many of us do as a part of everyday life. It is a simple skill that involves understanding that realizing certain things could happen in the future, and that there are steps we can take to be prepared for them.

There are all sorts of everyday examples of survival planning:

- Having a first aid kit in the house

- Stocking up on food and water when there is a particularly nasty weather pattern approaching

- Putting snow tires on your car, and carrying a shovel, salt, and a blanket if you live in an area with heavy snowfalls

For the sort of extreme situations we are discussing, planning is essential for survival.

In addition to training and skills, which we will go on to discuss, the two key areas are survival kits and evacuation routes.

Survival Kits

There are several key factors you have to consider with any survival kit.

The first is your environment. This is the key to the types of items you will need in your survival kit. Obviously if you are reading this in the desert southwest of America, you will need to plan differently from someone in Scandinavia.

Another vital issue is how much equipment you put in your kit. If you assume that you will have to carry it yourself (as opposed to being in a vehicle), you will need a smaller kit.

If survival is your goal, you should assume that you will have to carry your kit yourself on your body – remember, plan for the worst, hope for the best?

There are certain rules to follow:

- Always keep the most important items on your body – that will include your map and compass.
- Select items you can use for more than one purpose – thus if you have two items that will serve the same basic function, choose the one that can also serve another function.
- Do not duplicate items as this will increase your kit's size and weight.

A basic survival kit does not need to be elaborate. It must only contain functional items, and it needs to be in a small, durable, waterproof container. Examples of this include a Band-Aid box, a first aid case, an ammunition pouch, or a rafting dry bag.

The survival kit should contain 6 essential categories of items:

First aid kit
Water purification tablets or drops
Fire starting equipment
Signaling items
Food procurement items
Shelter items

In reality it might look something like this:

Lighter, metal match, waterproof matches.
Snare wire.
Signaling mirror.

Wrist compass.
Fish and snare line.
Fishhooks.
Candle.
Small hand lens.
Oxytetracycline tablets (for diarrhea or infections).
Water purification tablets.
Solar blanket.
Surgical blades.
Butterfly sutures.
Condoms – excellent for water storage.
Chap Stick.
Needle and thread.
A top quality, multipurpose knife.

Escape Packs

The first consideration is going to be the pack itself. Packs come in all different sizes and styles, so it's hard to be too specific as to what you should buy.

However, bear in mind that you will be carrying it, so it has to be a manageable size and a manageable weight. That means no massive backpacking packs – they are just too big and heavy, and will simply encourage you to over pack.

Similarly, forget the stylish one strap bags that are popular right now. They don't hold enough, and will get very uncomfortable very quickly.

What you want is a medium capacity day pack. They will hold around 30 pounds (15 kilos) quite comfortably. When shopping for day packs, consider the following:

Not everyone can carry the same amount – for example, you'll need smaller packs for your kids.

This is not the place to economize – buy the most comfortable, best quality pack you can. It will be your best friend or your worst enemy depending on whether you get something worthwhile.

An outside mesh pocket (or two) for a water bottle is well worth having.

Once you have chosen your pack, you'll need to decide what to carry. The main things to consider are:

- **Your survival kit:** We discussed this earlier. It should be compact and waterproof, and will be an essential part of your escape pack.
- **Hunting Knife:** Even if you don't want to become a 21st Century Rambo, you will still need a good hunting knife. A knife is a multipurpose tool; so again, look for quality, with a blade length of between 4 – 7 inches.
- **Multi-Purpose Knife:** Different tool, different uses. A good multipurpose knife – a Swiss Army Knife or a Leatherman for example – will come in handy a thousand times. Again, go for quality, not a cheap knock-off – they will just break when you most need them.

- **Hiking Pole:** These are invaluable over rough terrain, up and down hills, or when crossing water. You will also find them handy fending off the unwanted attentions of stray or hungry animals. If you get a telescoping pole you can simply attach it to your pack when you don't need it.
- **Binoculars:** The ability to see danger before you actually encounter it is not to be sneezed at. A good pair of binoculars will allow you to survey the land ahead and ensure that you know what is coming up. The best way of getting out of trouble is avoiding it. Look for a pair with a magnification of 8X30 or 10X25. Once you've bought them test them out to be sure you know how to use them focus etc.
- **Glasses:** Whether you wear glasses or contact lenses normally, you'll want glasses with you on your evacuation and beyond. The air may be full of soot and ash, and you'll soon run out of contact lens solution, so be sure to pack a spare pair of glasses in your escape pack. Also make certain to include a lens cleaning cloth – it will prove invaluable, and can also be used on your binoculars.
- **Water Bottle:** When choosing a water bottle you want a large bottle (32oz) – but be sure it fits the mesh pockets on the outside of your day pack. Look also for a wide mouthed bottle – they are much easier to fill.
- **Flat Pack Water Tank:** This is an essential item for any trip longer than a few hours. Flat pack water tanks roll up when empty, so they will take little space in your pack. When combined with the water purification tablets from your emergency kit, you will be able to produce a good supply of potable water for your whole group.
- **Hooded Poncho:** Predicting the weather is difficult enough from one day to the next, let alone months or years into the future. A good poncho will ensure that you stay dry, and can double as an improvised shelter at night.
- **Space Blankets:** These compact silver blankets work by reflecting your body heat back to you, and are essential in uncertain weather conditions. They will also provide UV protection if you are caught out in a solar storm.

Other items to consider include:

- **Boots:** There is no substitute for proper boots. Buy the best quality, waterproof boots you can find. Leather is still the best material. Be sure to get them in plenty of time, so that you can wear them in – not just wandering around the house, but on proper, extended walks. That will get your boots worn in, eliminate any hot spots, and get you in shape too!
- **Hat:** A wide brimmed hat will protect you from the elements, and is an essential item. The climate could be quite unpredictable, to say the least, so a hat that has a strap of some kind (or make your own) will ensure that it stays with you even in windy weather.
- **Goggles:** If a super volcano erupts, the air will be full of dust and ash, so good eye protection is a must. Some of the best goggles you can buy are actually high end swimming goggles – they are made from high impact materials, they seal superbly, and they have anti-fog treatment. In addition, you can even buy some that have prescription lenses fitted.
- **Bandana:** Anyone who has done a lot of camping or backpacking will tell you that these are invaluable – they have a million and one uses, including head cover, and keeping dust and smoke out of your mouth. You can also use them to dry dishes, bind bleeding wounds.....
- **Clothes:** For clothing, opt for comfortable, durable items. Blue jeans last forever, as do most military surplus clothes.
- **Leather jacket:** Tough and comfortable, a leather jacket will last for years.
- **Fleece vest:** Small and compact, these offer lots of warmth for a small amount of weight.
- **Spare socks and underwear:** Hygiene is a key part of staying healthy. You need extra socks and underwear to stay clean and healthy.
- **Leather Work Gloves:** These will be indispensable if you are going to be working a lot with your hands. They will save you from innumerable small injuries – and small injuries can easily turn into major problems when hygiene and first aid are at a premium.

When packing your escape bag, it is a good idea to pack individual items in zip-lock type plastic bags to keep them clean, dry, and separated. It makes finding things much easier too.

Don't forget to include the smaller items:

- Toilet paper
- Soap and personal hygiene items
- Duct tape – a million and one uses
- Clothesline

Food: You will need to pack food that is convenient, nutritious, and hopefully tasty. Good items to pack include:

- Dried fruit
- Nuts
- Jerky
- Peanut butter
- Cereal bars
- Trail mix (granola type cereal mixed with dried fruit, nuts, M&Ms, etc)

Finally, don't forget your water bottles – while you won't want to leave them full for long periods of time, be sure to fill them before you actually begin your evacuation.

While having an escape pack is essential, once you have it all planned and packed, you will need somewhere to go. A safe haven.

A Safe Haven

Where will you go when disaster strikes? This will become a vital question as 2012 approaches. If you are to survive the coming storm, you will need a safe haven.

This safe haven needs to be carefully thought through. It will ideally be a place where you can sit out the worst of the storm, and be able to take care of yourself and your loved ones when our normal societal infrastructure collapses.

The ideal location would therefore be somewhere quiet and rural, ideally with a natural source of water nearby. Those with a second home might find that to be the perfect location.

If you don't have that luxury, then you need to think about whom in your family has the best location for your close family. Assuming that food will be in short supply for days, weeks, even months, it will ideally be somewhere with at least a garden in which you can grow some staples.

Once you have chosen your location, you need to stock it with appropriate supplies. This doesn't mean the standard bottles of water and extra loaf of bread that you get in when the weather man says it's going to snow, but a proper supply of:

- Tinned food
- Bottled water
- Seeds for edible crops
- Garden tools
- A complete toolkit (manual tools – power tools will likely not work)
- A generator (you may not be able to get fuel for it, but it's still worth considering)

Your safe haven needs to be prepared for a worst case scenario, so you should think of this as somewhere you may have to live, without any outside help, for several months.

It will also need to be somewhere that you can shelter from solar storms – we'll explain what that entails later.

Evacuation Routes

Once you have planned your safe haven, you need to figure out how your family and loved ones are going to get there.

While its possible that you will be able to travel at least part of the way by car, it is still prudent to plan you route on the assumption that your journey will be on foot.

Of course we don't know yet the point at which the effects of Planet X will become inevitable and obvious, so it may be that you have a lead time of several weeks or even months to relocate or gather in your safe haven at your own leisure.

However, it's also possible that at some point there will be a mad scramble as society and the infrastructure we depend on suddenly reach breaking point and break down. If you are not in your chosen location by then, you will need to plan an evacuation route.

Where will you be – at work? Where will your kids be – at school? Planning an evacuation route means figuring out both ends of the journey – where you'll wind up (the safe haven) and where you are coming from (school, work, etc).

The first consideration with an evacuation route is distance. Assuming that the roads are closed, it needs to be a distance that you can cover on foot. Thus a prime consideration is how far can you walk in a day, and how many days can you realistically stay on your feet before reaching your safe haven?

If you are an unfit couch potato who never walks further than the house to the car, now might be a good time to think about getting up and getting moving.

Another consideration when planning your evacuation route is to always have a plan B. For example, if your evacuation route involves crossing a particular bridge, what will you do if that bridge is down, or is closed by the military?

In addition, if your route is more than a few miles, and likely to take more than one day, you also need rendezvous points along the way so that members of your group can meet – remember, you may all be starting from different points.

For any journey that will take two or more days, you will need to plan rest points along the way. These need to be locations that offer both shelter and potable water.

The more you know about your chosen route the better. Where are the water sources? Not just obvious ones like rivers and lakes, but also ponds, water tanks, anything that might provide this most essential supply.

It's important that you walk your route – things look very different when walking than they do in a car. When you walk your route you need to see things from a walker's point of view – you can take short cuts that cars just can't make.

Look also for features such as police stations, hospitals, doctor's offices, anything that might be of use to you.

Finally, buy or make maps of your walkout. You'll need one for every member of your group, sealed in a vinyl map case, with notes of rendezvous and key features. As the time approaches you will need to have this with you at all times.

In addition to your map, you will also need an emergency pack with you when you travel – some people call these scoot packs. Let's look at what you'll need to take.

Basic Survival Medicine

One of the most essential skills you can acquire between now and 2012 is the ability to deal with basic medical problems. Lack of training and medical supplies will leave you unable to treat injuries and illness, and compromise your position faster than almost anything else.

The ability to treat yourself and the other members of your group will not only keep you all healthy, it will also increase your morale – the ability to take care of yourself is a powerful positive reinforcement when things seem bleak.

Basic Requirements for Maintenance of Good Health

Basic survival medicine starts not with the sort of dangerous and dubious emergency bush surgery that you often see portrayed on television, but with water, food, and good personal hygiene. As with many areas, prevention is by far the most effective way to deal with an issue.

Water

We can survive for around two days without water, but even half a day without water will start to impair your basic bodily functions.

Your body constantly loses water – through breathing, sweating, urinating, defecating, and so on. Without any extra factors (extreme heat, exercise, etc) we lose, and therefore need to replace, around 2 to 3 liters of water per day.

If we become dehydrated, our performance is increasingly impaired:

5% Fluid Loss: Causes thirst, irritability, nausea, and weakness.

10% Fluid Loss: Results in dizziness, headache, inability to walk, tingling sensation in the limbs.

15% Fluid Loss: Results in dim vision, painful urination, swollen tongue, deafness, numb feeling in the skin.

Anything above a 15% fluid loss is likely to lead to death.

It's easy to know if you are becoming dehydrated. The most common symptoms include:

Thirst
Dark urine with a strong odor
Headache
Difficulty urinating
Dark, sunken eyes
Extreme tiredness
Irritability
Delayed capillary refill in fingernail beds
Trench line down center of tongue

The simplest way to avoid dehydration is to drink water at regular intervals, even if you are not thirsty. Many people don't feel thirsty until they are already 2 percent dehydrated, so thirst is not a reliable indicator of how much water you need.

The simplest ways to keep sufficiently hydrated include:

Drink little and often
Limit sweat-producing activities (as far as is possible)
Always drink water when eating – the body uses water to digest food, so you always need to drink water with a meal
Avoid alcohol, caffeine, and other drinks that dehydrate you

Food

Eating regularly will keep your energy levels high. Without sufficient food your mental and physical capabilities will rapidly deteriorate.

In addition to simply providing energy, food also supplies the body with the vitamins and minerals it needs to stay healthy. Finally, good food can help improve morale when we are at a low ebb.

While you will likely be able to stock a certain amount of long life food in your safe haven (tinned food, long life milk, MRPs etc), it will also be prudent to look to the natural world to supplement – and maybe even ultimately replace – your stored food stocks.

The two basic natural sources of food are plants and animals (including fish).

Plant Foods

We have become very unfamiliar with the thought of actually eating from the plants around us, but they are a rich potential source of nutrients.

Good sources of plant foods include nuts, seeds, roots, green vegetables, and fruit.

As you become more familiar with what is in your natural environment, you can also learn to dry plants by wind, air, sun, or fire, retarding spoilage and allowing you to store or carry plant foods to use as needed.

Animal Foods

Hunting to eat actually is something that few of us have ever done – but meat is more nourishing than plant food, and supplies many of the nutrients that we need.

To be able to get meat, you need to know the habits of, and how to capture, the various wildlife in your area. While roast squirrel might not sound too tempting now, in a few years time it could be quite a delicacy!

For those who live near the coast, crustaceans, mollusks, and fish can be a reliable source of protein, while in desperate times, even insects and reptiles are edible.

Thus now is the time to start to learn the basics of setting the traps and snares that will allow you to catch larger game.

Personal Hygiene

There is an old saying that cleanliness is next to godliness. In any survival situation, cleanliness is actually next to healthiness – it is a vital factor in preventing infection and disease.

Of course we would all like to have a nice hot shower every day, but even if this is not possible, you can still stay clean.

The basic way to stay clean is to use a cloth and soapy water to wash yourself regularly. Even if you can't wash your whole body, be sure to pay attention to your hands, feet, armpits, crotch, and hair. These are the prime areas for infestation and infection. If you don't have access to soap, or have run out, good alternatives to soap include ashes or sand.

If you don't have sufficient water to use for washing, you can take an "air" bath – this involves removing as much clothing as possible (climate and other considerations permitting) and exposing your body to the sun and air for at least an hour. Be careful not to get sunburned, however.

Other more specific considerations include:

Keep Your Hands Clean

This is the number one way to avoid illness and infection, as germs on your hands can infect food and wounds.

Therefore be sure to always wash your hands:

- After handling anything that is a likely source of germs
- After using the toilet
- After caring for anyone else who is sick
- Before and after handling any food or food utensils
- Before drinking water

It will also help if you keep your fingernails clean and well trimmed, and keep your fingers out of your mouth.

Keep Your Hair Clean

Your hair is a prime site for bacteria, fleas, lice, and other parasites. Even if you can't shower regularly, keeping your hair clean, combed, and trimmed helps you avoid these types of infections.

Keep Your Clothing Clean

Anything you wear or sleep in needs to be kept as clean as possible. – this will reduce the chance of skin infections and parasitic infestation.

Try to change your underwear and socks daily, and clean your outer clothing whenever it becomes visibly dirty.

If you are using sleeping bags, be sure to turn them inside out to air them each day.

Keep Your Teeth Clean

It's quite possible that you'll have no access to a dentist, so be sure to clean your mouth and teeth with a toothbrush at least once per day.

If you don't have a toothbrush, you can use a chewing stick. This is simply a twig, about 8 inches (20 centimeters) long and 1.2 inch (1 centimeter) wide.

Using it is easy – chew one end to separate the fibers, and then brush your teeth thoroughly with the splayed end.

Alternatively, you can wrap a clean strip of cloth around your fingers and scrub your teeth with it to wipe away food particles, or brush your teeth with small amounts of sand, baking soda, salt, or soap.

Always be sure to rinse your mouth with clean, fresh water, and floss regularly with dental floss, string or fiber.

If you develop cavities, there are various ways of making temporary fillings. The first step is to thoroughly clean and rinse the area. Then you can pack the area with candle wax, tobacco, aspirin, hot pepper, ginger root, tooth paste or powder.

Take Care of Your Feet

The first way to prevent foot problems is to make sure that the shoes you are wearing when you are walking your evacuation route are suitable, and well broken in. Wearing new shoes on a long hike is a quick way to problems.

General prevention involves washing your feet daily, keeping your toenails trimmed, and changing your socks daily.

If you do develop blisters, it is best to leave them intact. If, however, they burst, or are so debilitating that you have to burst them in order to continue walking, follow this procedure:

Use a sterilized sewing needle

Make the smallest hole necessary to open the blister

Squeeze the fluid out

Treat all burst or open blisters as an open wound – apply antiseptic and a dressing

Check the wound and dressing regularly

Don't Get Overtired

When you are in stressful situations it is easy to let yourself get overtired. Be sure to allow regular short rest stops when hiking or working – allow at least 10 minutes per hour.

Keep Your Camp

Whether you wind up in a house, a shed, a shelter or simply an outdoor camp site be sure to keep the area clean at all times.

If you are outside, be sure that your toilet area is away from your camp, and away from any water sources. Bury all human waste, and be sure to collect drinking water upstream from the campsite.

MEDICAL EMERGENCIES

Medical problems and emergencies are by nature somewhat unforeseeable. However, by taking appropriate first aid training NOW you will be better able to deal with problems in the future.

Reputable training organizations such as the Red Cross in the USA and the St. John's Ambulance in the UK offer regular training courses at a variety of levels.

The issues that are vital to be able to deal with include:

- Breathing Problems
- Severe Bleeding
- Shock
- Wounds
- Sprains, strains and breaks (bone and joint injuries)
- Burns
- Stings and bites
- Environmental Problems (heat stroke, hypothermia, etc)

A first aid course is the best way to learn how to deal with these problems, but if not, buy and study a good first aid book.

There is no possible way you can learn to deal with all medical issues without training to become a doctor or a nurse, but with good first aid training, and a calm head, you will be able to deal with most problems.

Your safe haven should have a fully stocked first aid kit. There are hundreds of opinions on what should be in a first aid kit, but the essentials would include:

- Triangular bandages
- Rolled bandages
- Sterile gauze
- Adhesive wound dressing
- Plaster strip dressings
- Adhesive tape –hypoallergenic
- Sterile non-adhesive pads – small and large
- Sterile eye pads
- Eye wash container and solution
- Antiseptic solution
- Safety pins
- Scissors
- Splinter forceps (tweezers)

- Anti diarrhea medicine
- Germicidal hand wipes or waterless alcohol-based hand sanitizers
- Disposable gloves
- Allergy medication like Benadryl in case someone encounters a bug, plant, or weather event that causes an allergic reaction
- Alcohol pads for cleaning wounds
- Ibuprofen or aspirin
- CPR breathing barrier, such as a face shield
- First aid manual

There are some environmental medical conditions that everyone should know how to treat.

Heat Problems

Knowing how to treat common heat related health problems is an important skill, particularly if you are around people who are not used to being outdoors a lot.

Heat Cramps

These are due to dehydration from excessive sweating. The symptoms can include moderate to severe muscle cramps in the legs, arms, or abdomen.

Typically these symptoms start as a mild muscular discomfort, but will develop if the person is not treated quickly.

The first step is to stop all activity and get in the shade. The other key is to drink water.

If heat cramps are ignored or allowed to develop, then heat exhaustion can result.

Heat Exhaustion

This occurs when there is the loss of considerable amounts of water and salt.

Symptoms include:

- Headaches
- Mental confusion
- Irritability
- Excessive sweating
- Weakness
- Dizziness
- Cramps
- Pale, moist, clammy skin

Immediate treatment is needed, as follows:

- Get out of the sun and into the shade immediately.
- Sit or lie down
- Sprinkle with cool water and fan gently
- Drink small amounts of water every 3 minutes

- Stay quiet and rest to allow the body to cool and return to normal

Heat Stroke

The most extreme heat related medical condition, heat stroke can be fatal. It occurs when there is a massive loss of water and salt and the body can no longer cool itself.

Symptoms are:

- Lack of sweat
- Hot dry skin
- Headache
- Dizziness
- High pulse rate
- Nausea and vomiting
- Mental confusion leading to loss of consciousness

Treatment:

- Immediately get the person into shade
- Loosen clothing
- Pour water on the victim – whatever you have available, no matter how dirty
- Fan them
- Massage the arms, legs, and body
- If they regain consciousness, let them drink small amounts of water every 3 minutes

COLD WEATHER MEDICINE

Hypothermia

Hypothermia occurs when the body loses heat faster than it can produce it. Hypothermia can be caused by general exposure, or getting wet.

The initial symptom is shivering – this is the body’s defense mechanism, an effective way to generate heat in the short term. If no other means of getting warm is introduced, the shivering may progress, and will eventually become uncontrolled, interfering with the ability to do anything else.

Our normal core temperature is 98.6 degrees Fahrenheit or 37.0 degrees Celsius. When it falls to between 35 and 32 degrees C (95 to 90 degrees F), we become sluggish, our thinking is impaired, and a false feeling of warmth may occur.

As core body temperature falls below 32 degrees C (90 degrees F), symptoms such as muscle rigidity, unconsciousness, and barely detectable signs vital, signs will set in. Once the core temperature falls below 25 degrees C, (77 degrees F), death is almost inevitable. Obviously the only effective treatment for hypothermia is to rewarm the entire body.

Ideally this should be done in hospital – if you rewarm someone too quickly there is a risk of cardiac arrest and rewarming shock.

If no hospital is available, alternatives include warm water enemas – usually not practical, however – or wrapping the victim in a warm sleeping bag with another person who is warm. Both people should be naked for this to be maximally effective.

Be aware, however, that if you leave the warm person in the sleeping bag with victim too long, they could also become a hypothermia victim!

Another effective method of warming someone who is conscious is to give them hot, sweetened fluids. Good sources of calories in this situation include honey, sugar, or hot cocoa.

Frostbite

Frostbite occurs when tissues become frozen. Mild frostbite only affects the skin, turning it a dull white colour, while deep frostbite extends below the skin to the tissues beneath.

The most vulnerable areas are your hands, feet, and exposed facial areas such as the tip of your nose – when you are cold, your body preserves body heat by reducing blood flow to these areas, making them more likely to cool down.

As with other environmental injuries, prevention is the best cure. If you are with someone else, periodically check your partner's face, and have them check yours.

If you are alone, try and limit the exposure of your hands and face to the cold – you can periodically cover your nose and the lower part of your face with your mitten to warm it up.

Other ways of keeping warm include:

Face. Cover your face periodically with your gloved hands. Make funny faces to get the muscles moving. Maintain circulation by twitching and wrinkling the skin on your hands. Move your hands around inside your gloves by wiggling your fingers or clenching and unclenching them. You can also warm them by placing them close to your body – tucked under your arms is an effective way to warm them.

Feet. Move your feet and wiggle your toes inside of your boots, and stamp your feet.

The first symptom of frostbite is reduced feeling or loss of feeling in your hands and feet. How severe the frostbite is will depend on how long you lose feeling for.

To rewarm a light frostbite, use the methods outlined above – movement and proximity to other warm areas on your body are the safest and easiest ways to warm your hands, feet, and face.

Rewarming deep frostbite without proper medical supervision is extremely hazardous, and can cause further damage.

Trench Foot and Immersion Foot

Different from frostbite, these conditions are caused by hours or days of exposure to wet or damp conditions at temperatures just above freezing – the name trench foot comes from soldiers in the First World War who contracted this condition from living in sodden trenches for months at a time.

Symptoms of trench foot include pins and needles, tingling, numbness, and then pain. The skin will initially appear damp, white, and shriveled.

As the condition worsens, it will take on a red and then a bluish or black discoloration. The feet will feel cold and swollen, and have a waxy appearance, and as the pain increases, walking will become difficult.

While the nerves and muscles sustain the main damage, gangrene can set in, and the flesh can even begin to die. In extreme cases this can ultimately lead to amputation.

For such a potentially serious condition, prevention is simple – keep your feet clean and dry. Make sure you always have clean, dry socks with you, and wash your feet and put on dry socks every day.

Dehydration

People don't think of dehydration as a cold weather problem, but when you are bundled up layers of clothing all day, it is easy to underestimate how much moisture you are using.

Even in cold weather you need to drink water throughout the day to replace this lost fluid.

In any climate, the easiest way to assess your state of hydration is to observe the colour of your urine. It should be a pale yellow colour, with little odor. If it is dark yellow, or has a strong odor, it is a clear sign that you are becoming dehydrated.

Sunburn

Sunburn can still be a problem in low temperatures. Exposed skin can become sunburned even when the air temperature is well below freezing.

In addition, the sun's rays can reflect up at a variety of angles from snow, ice, and water, hitting some unusual and sensitive areas of skin –

examples includes the lips, the underside of the nostrils, and the eyelids. Altitude also exaggerates the sunburn.

Whatever the temperature, if it isn't very sunny, still apply sunscreen to exposed areas.

Snow Blindness

When the sun's ultraviolet rays reflect up off a snow-covered area, it can lead to snow blindness.

Symptoms can include a feeling of grit in the eyes, and pain in and around the eyes that increases when you move your eyes. You can also experience red, teary eyes, and a headache that is worse when you are exposed to the sunlight.

If the exposure to these damaging rays continues, it can result in permanent eye damage. The only way to treat snow blindness is to completely stop the exposure to the sun's rays. This usually involves bandaging your eyes until the symptoms disappear.

Preventing snow blindness is simple – wear sunglasses. If you don't have any sunglasses, you will have to improvise.

You can make temporary protection for your eyes by cutting slits in a piece of cardboard, some thin wood, tree bark, or other available material. Putting soot under your eyes (like American Footballers playing under floodlights) will help reduce shine and glare.

Constipation

Constipation is common in cold conditions for several reasons:

You delay going to the toilet because it's cold and inconvenient

You are dehydrated

Your diet includes lots of dry or dehydrated foods

The answer is to increase your fluid intake, go to the toilet when you need to, rather than delaying, and adding some fruit to your diet.

SHELTERS

If you are forced to live outside – whether for a couple of days or several months – then a shelter will be essential. It will protect you from the sun, wind, rain, and snow, hot or cold temperatures, and insects.

Depending on the environment, your shelter may be the first thing you need to consider, taking precedence over even your need for food and water – remember, prolonged exposure to cold or rain can lead to exhaustion and illness.

A shelter must be large enough to protect you, but in cold climates it must also be small enough to contain your body heat.

SITE SELECTION

The first priority is site selection. When considering where to locate your camp, you need to consider the following:

- Does the area contain the materials you need to make your shelter?
- Is it large enough for you to lie down comfortably?
- Is the ground level enough to be comfortable?
- Does it provide protection against wild animals, rocks, dead trees, etc?
- Is it free from insects, reptiles, and poisonous plants?

There are some locations you should always avoid:

- Gullies or channels where you might get flash floods
- Beneath areas of avalanches or rockslides in mountainous terrain
- Near bodies of water that are below their high water mark

Other key considerations include:

In winter months you need a location that will protect you from the environment, and offer a good source of fuel and water
In summer, you need a site that offers a good source of water, but that is also almost insect-free.

- How much time and effort do you need to build the shelter?
- Do you have the tools to build it, or can you improvise?

TYPES OF SHELTERS

There are various types of shelters that you can make – but whatever you are considering; learning on the job is not recommended. If this is a skill you think you might need to utilize, take a wilderness survival course, or something similar, and learn the skills you will need well in advance.

Poncho Lean-To

This is one of the simplest forms of shelter to build, requiring limited time and minimal equipment.

To build a poncho lean-to you will need a poncho (part of your survival pack), 2 to 3 meters of rope or parachute cord, three stakes, and two trees. Be sure to select a location where the back of your lean-to is into the wind.

To make the poncho lean-to, start by tying off the hood of the poncho. Tie half your cord through one corner grommet, the other half to the other corner grommet.

If you attach a drip stick (a short stick) to each rope about an inch from the grommet, the rainwater will run down the sticks instead of running down the ropes into the lean-to.

Similarly, tying short strings (3-4 inches long) to each grommet along the poncho's top edge will channel the water down the line and not down into the shelter.

Tie the ropes to the trees at about waist high on the trees, then spread the poncho out and anchor it to the ground – putting sharpened sticks through the grommets and into the ground is the easiest way to secure it to the ground.

To prevent rain from building up in the center of the poncho, attach one end of a line to the poncho hood and the other end to an overhanging branch. Make sure there is no slack in the line.

You can also make this type of shelter warmer and more waterproof by building up brush along the sides of the shelter, and by insulating the ground with leaves or pine needles. When sleeping out, you lose up to 80 percent of your body heat to the ground, so anything you can do to reduce the loss of body heat through the ground will be of benefit.

Other techniques include sleeping on a layer of clothes, and putting your feet and legs inside your pack at night.

Poncho Tent

In more extreme weather, the poncho tent is a good alternative to the lean-to.

This tent is easy to construct. Begin as for the poncho lean-to, by tying off the poncho hood. Then tie a 1.5- to 2.5-meter rope to the center grommet on each side of the poncho, and tie the other ends of these cords to two trees, at about knee height. Be sure to stretch the poncho tight.

Draw one side of the poncho down and secure it to the ground as before, then follow the same procedure on the other side.

While this method offers less usable space than the lean-to, in heavy rain or winds it will keep you drier. You can also stack brush at one of both ends to make it more snug and secure.

Wooden Lean-To

If you don't have, or don't want to use a poncho, and are in a wooded area, you can make an effective lean-to from natural materials.

While it does take a while to make this type of shelter, it will provide effective protection from the elements. You'll need:

- One pole about 2 meters long and 2.5 centimeters in diameter
- Six to eight poles (beams) about 3 meters long and 2.5 centimeters in diameter
- Rope, cord or vines
- A variety of poles, saplings, or vines to crisscross the beams

To start with you need to find two trees about 2 meters apart – tie the 2-meter pole to the two trees at around waist to chest height. When this horizontal support is secure, prop the beams against it, then crisscross the saplings or vines through the beams.

Cover this basic framework with brush, leaves, pine needles, or grass – whatever material is available. Be sure to start at the bottom and working your way up.

As with any shelter, placing straw, leaves, pine needles, or grass inside the shelter will ensure that you stay warm.

Finally, if you pile insulating material at the entrance you can drag it across the entrance once you are inside to increase both comfort and security.

Natural Shelters

It's important not to forget that nature often provides shelters. These can include:

- Caves
- Rocky crevices
- Thick bushes
- Small depressions in the ground
- Large boulders or rocks
- Low-hanging tree limbs
- Fallen trees with thick branches

Any of these can either be used as it is, or adapted to make a secure shelter. However, when looking at natural formations, be sure to consider the following:

- Avoid low ground such as ravines, narrow valleys, or creek beds. Flash flooding can quickly turn a secure shelter into a death trap
- Low lying areas – at night, heavy cold air settles into low areas
- Thick, brushy, low ground is a popular habitat for insects, poisonous snakes, ticks, mites, scorpions, and stinging ants. If you find an enticing shelter, it's quite possible other creatures also use it!
- Always be aware of dead limbs, loose rocks, or other hazards that could fall on your shelter.

FINDING WATER

In any extended survival situation, finding a good source of water is going to be one of your most urgent needs.

Even in cold climates we need a minimum of 2 liters of water each day to maintain efficiency, while in hot conditions this can increase dramatically.

If the basic infrastructure is compromised, you may no longer be able to rely on fresh, clean water coming from your taps at home – that's assuming, of course, that you still have a house.

There are two issues to consider when thinking about your water needs. The first is finding water – what are the sources of water you can turn to if you can no longer rely on tap water. Secondly, you need to consider how you are going to ensure that any water you find is potable – that is, safe to drink.

WATER SOURCES

Almost any environment has water to some degree. Once you start thinking about this as a priority, you will start to see the possibilities.

In an urban or suburban area they might include:

- Lakes
- Streams
- Water tanks
- Ponds
- Water features
- Water butts

You also need to learn to look to the environment to help you if other sources are not available.

Natural Water Sources

One of the most reliable sources of natural water is dew. Australian natives have developed an incredibly effective way of gathering heavy dew. They tie rags or tufts of fine grass around their ankles and walk through dew-covered grass before sunrise.

As they walk the rags or grass tufts absorb the dew and become sodden. They stop periodically and wring the water into a container.

Using this method it is possible to collect as much as a liter an hour.

Water can also be found in holes in trees, tree crotches or rock crevices. Bees or ants going into locations such as these are a good indicator of water.

To get to the water you will need to siphon it out with plastic tubing, scoop it up with an improvised dipper (a piece of tree bark for example), or stuff a piece of cloth in the hole to absorb the water and then wring the cloth out into a container.

You can also get water from plants with moist pulpy centers. Simply cut off a section of the plant and squeeze or smash the pulp so that the moisture runs out into your water container.

Similarly, plant roots can often provide water. You will need to dig or pry the roots out of the ground, clean them as much as possible, then cut them into short pieces and smash the pulp so that the moisture runs out.

CONSTRUCTING A STILL

For a more long-term, reliable source of water, you should consider making a still. Stills draw moisture from the ground and from plant material, and can produce up to a liter of water per 24 hours.

Above Ground Still

An above ground still needs to be sited on a sunny slope. You will need:

A clear plastic bag
Green leafy vegetation
A small rock

The vegetation needs to be free of any hard sticks or sharp spikes that might puncture the bag – you also need to be sure you do not include any poisonous vegetation.

Fill the plastic bag half to three-fourths full with the green leafy vegetation, and place the small rock inside.

Close the mouth of the bag securely, leaving as much air space as possible. If you have a piece of tubing, a straw, or a hollow reed, insert one end in the mouth of the bag before you tie it, then tie off or plug the other end so that the moist air will not escape.

This will allow you to drain out or drink the condensed water without untying the bag.

Place the bag on a sunny slope with the mouth facing downhill, but slightly higher than the low point in the bag. Make sure that the rock is in the low point of the bag.

Continue to use the bag until the vegetation begins to dry out, and the water production is reduced – then, simply replace the vegetation and begin again.

Below Ground Still

Another good source of water is a below ground still. You will need:

- A digging tool
- A water container
- A clear plastic sheet
- A long drinking tube
- A rock

The location of the below ground still is important. The site needs to be:

- One where you believe the soil will contain moisture
- Easy to dig
- Sunlight must hit the site most of the day

To construct the still:

- Dig a bowl-shaped hole about 1 meter across and 60 centimeters deep
- Dig a sump in the center of the hole – the sump must be deep enough for your container to stand upright in it
- Anchor the tubing into the bottom of the container – the easiest way to do this is to tie a very loose overhand knot in the tubing
- Place the container upright in the sump with the unanchored end of the tubing extending out beyond the lip of your hole
- Place the plastic sheet over the hole, anchoring the edges with rocks or soil to hold it in place

- Place a rock in the center of the plastic sheet
- Gently lower the plastic sheet over the hole until it is about 40 centimeters below ground level – it should now look like an inverted cone, with the rock forming the apex
- Ensure that the rock (the cone's apex) is directly over your container.
- Ensure that the plastic sheet does not touch the sides of the hole – if it does, the earth will absorb your precious condensed water.
- Plug the top of your tube so that the moisture will not evaporate.

As moisture gathers you can drink water without disturbing the still by using the tube as a straw.

WATER PURIFICATION

While some natural sources of water will be pure enough to drink, others will need to be purified.

Purification can be achieved by various means:

- Adding chlorine or iodine
- Boiling the water
- Using a commercial water filter

Drinking contaminated water can lead to a range of illnesses including:

- **Dysentery:** Symptoms include severe, prolonged diarrhea with bloody stools, fever, and weakness.
- **Cholera and typhoid:** These are more likely as basic services break down and illness spreads
- **Flukes:** These are found in stagnant, polluted water – particularly in warm climates. If you swallow flukes, they will bore into the bloodstream, live as parasites, and cause disease.
- **Leeches:** If you swallow a leech, it can hook onto your throat or inside your nose and suck blood. This creates an open wound that can become infected.

While rainwater collected in clean containers, dew, and water from stills is usually safe for drinking, you will need to purify water from lakes, ponds, swamps, springs, or streams. This is particularly important if the water is collected near human settlements.

Purification methods include:

- Water purification tablets: It is important to follow the directions provided. Either iodine or chlorine is effective methods of purification.
- Boiling water: There are no strict time limits on how long you need to boil water. If the water reaches a point where it is rolling and bubbling, the heat will have killed any bacteria or viruses.
- Commercial Filters: Most good outdoors stores sell a variety of filters for backpackers and travelers. If you are buying one in preparation for 2012, look for the most robust design you can find, with the greatest capacity.

As with all filters, they need cleaning or replacing after a while – either buy some replacement cartridges, or look for a model where you can clean the filter by reverse pumping.

WATER FILTRATION

If the only water you can find is muddy, stagnant, or foul smelling, you will need to clear it first before you purify it. Attempting to purify dirty water is a waste of time, and can block your filter.

Once you have cleared the water, you will still need to purify it using the methods outlined above in order to make it potable.

You can easily clear water by:

- By placing it in a container and letting it stand for 12 hours.
- By pouring it through a filtering system.

To make a simple filtering system, place several centimeters or layers of filtering material such as sand, crushed rock, charcoal, or cloth in a container such as a hollow log or an article of clothing. Pour the water through it to extract the worst of the contaminants.

Alternatively, you can remove odors from water by adding charcoal and letting it stand for at least 45 minutes.

FIRE

Second only to water in many survival situations, the ability to start a fire can make the difference between living and dying.

Fire will provide warmth, cook and preserve your food, and is a great source of comfort.

You can also use fire to purify water, sterilize bandages and other items, signal for rescue, and provide security against wild animals.

However, you have to know how to start and use fire. Used improperly it can cause problems such as forest fires, burns, or carbon monoxide poisoning when used in small shelters.

SITE SELECTION AND PREPARATION

One of the keys to successfully building a fire is choosing the right location. You will need to look for a location that is:

- Dry
- Is protected from the wind
- Is suitably placed in relation to your shelter
- Will concentrate the heat in the direction you want
- Has a supply of wood or other fuel available

Preparation is crucial. If you are in a wooded or brush-covered area, you need to clear the brush and scrape the surface soil from the place you have selected. Be sure to clear a space of at least 1 meter in diameter to reduce the chance of your fire spreading.

Constructing a fire wall using logs or rocks will dramatically increase the effectiveness of your fire. It will:

- Help to direct the heat where you want it
- Reduce flying sparks
- Reduce the amount of wind blowing into the fire

However, be aware that you still need sufficient wind to keep the fire burning. Fires need oxygen to keep them alive.

When you are building your fire wall, avoid using wet or porous rocks, as they can explode as they heat up.

FIRE MATERIAL

To successfully build a fire you need three types of materials:

- Tinder
- Kindling
- Fuel

Tinder: Tinder is dry material that will ignite easily – just a spark will get it started. Good tinder must therefore be absolutely dry.

Charred cloth makes a reliable source of tinder, and is easy to make. It holds a spark for long periods, allowing you to put tinder on the hot area to generate a small flame.

To make charred cloth, simply heat some cotton cloth until it turns black, but does not burn. Once you've made it, you have to keep it absolutely dry. This is best done by putting it in an airtight container.

Kindling: Material that combusts easily, it should be added to your burning tinder. It will help to increase the fire's temperature, making it easier to ignite less combustible material.

Fuel: Less combustible material, it burns slowly and steadily once it has ignited.

HOW TO BUILD A FIRE

There are ways to build a fire, depending on circumstances.

Tepee

The tepee works well with wet wood. To build a tepee fire, construct the tinder and a few sticks of kindling in the shape of a tepee or cone.

Light the center of the fire, and as the tepee burns, the outside logs will fall inward, feeding the fire.

Lean-To

Insert a green stick in the ground at an angle of around 30-degrees, pointing in the direction of the wind.

Arrange your tinder deep under this lean-to stick, and lean some kindling against the lean-to stick.

Light the tinder, and as the kindling ignites gradually add more kindling until the fire is big enough to add fuel.

Cross-Ditch

To use this method you simply dig a shallow ditch about 30 centimeters by 30, and about 7.5 centimeters deep.

Place a large chink of tinder in the center of the ditch, and build a kindling pyramid above it. The air will flow under the tinder and improve airflow.

Pyramid

The pyramid is ideal for a night time fire that you don't need to tend.

Start with two small logs laid out parallel on the ground. Build a layer of logs across them, then continue adding three or four more layers of logs or branches, each smaller than and at right angles to the layer below.

Start the fire on top of the pyramid – as it burns it will gradually ignite each successive layer of logs below it. Because this fire that burns downwards, it requires no attention during the night.

LIGHTING A FIRE

When lighting a fire, you have two basic choices – modern methods and primitive methods.

Modern Methods

Modern methods are the easiest way to light a fire. As long as you have a sufficient supply, there's no need to use more primitive methods.

Matches

Waterproof matches are the obvious choice in survival situations. Be sure to also store them in a waterproof container, along with a dependable striker pad of some kind.

Convex Lens

This method will only work on bright, sunny days.

You will need a lens of some kind – this could be from a pair of binoculars, a camera, a magnifying glass, or even a strong pair of glasses.

The trick is to angle the lens so that you concentrate the sun's rays on the tinder. You need to keep the lens steady on the same spot until the tinder begins to smolder.

Once it begins to smolder, gently blow or fan the tinder into flame.

Metal Match

Sold in camping and outdoors stores, these are a reliable and durable way to start fires.

To use a metal match, place a flat, dry leaf under your tinder, with a portion of the leaf exposed.

With the tip of the metal match on the dry leaf, scrape a metal knife blade against the metal match to produce sparks.

The sparks will fly off into the tinder and ignite it.

Primitive Methods

These are methods that have been around for eons. They can be hard work, but with practice they are effective.

As with other types of training, the time to learn and practice these techniques is now, not when disaster strikes.

Types of techniques you might learn or practice include:

Flint and Steel

This is the easiest and most reliable of the primitive methods to use. You simply strike a flint or other hard, sharp-edged rock edge with a piece of carbon steel – note, stainless steel does not produce a good spark.

Once a spark ignites the tinder, blow on it to bring it to life.

Fire-Plow

The fire-plow is a friction method of ignition that involves rubbing a hardwood shaft against a softer wood base.

The plowing action of the shaft pushes out small particles of wood fibers that will eventually ignite.

Bow and Drill

Another basic technique, but one that it is essential to learn and practice. Most people will require a lot of practice before they can reliably use this technique to start a fire.

FINDING FOOD

The three essentials of survival – water, food, and shelter – will need to be prioritized according to your individual situation.

However, sooner or later you will need to find reliable sources of food.

It is impossible to predict exactly how 2012 will unfold, how people will react, and what that will mean in terms of the number of survivors and the resources available.

It would certainly be prudent to stockpile as much long-life food as possible, and it may be that there will be other sources that you can easily turn to when your own supply begins to run low – abandoned supermarkets, deserted farms or orchards, closed restaurants.

Even so, it is still possible that at some point you will have to turn to nature if you are to feed yourself properly.

ANIMALS FOR FOOD

Chances are that wherever you are, smaller animals will be in much more plentiful supply than large game. Therefore unless you have the chance to take large game, concentrate your efforts on smaller animals.

Smaller animals are also easier to prepare, and less likely to spoil or attract other more dangerous predators, drawn to the smell of a large carcass.

If you are to effectively hunt small prey it is essential that you take the time to learn their habits and behavioral patterns. Again, the time to do this is while you still have your own food supplies to sustain you, not when you are hungry, weak, and desperate.

Animals that inhabit a particular, limited area, and occupy a den or nest, will make good choices for trapping, as will those that have clear trails that they use regularly.

As hunger becomes more of an issue you will have to start eating everything imaginable for nourishment. The truth is that almost anything that crawls, swims, walks, or flies can be eaten. The only obstacle to staying well nourished is likely to be your natural aversion to a particular food source.

The bottom line is that a true survivor will eat whatever is available in order to maintain their health.

Insects

Not only are insects the most abundant life-form on earth, they are also the easiest to catch.

Insects are also a fantastic source of nutrition, particularly protein. Whereas beef is only 20 percent, insects provide 65 to 80 percent protein!

Of course, some need to be avoided – the list of those to be avoided includes:

- Those that sting or bite
- Hairy or brightly colored insects
- Caterpillars
- Any insects that have a pungent odor
- Spiders
- Common disease carriers such as ticks, flies, and mosquitoes

What that leaves is a whole variety of ants, termites, beetles, and grubs. They can be found under rotting logs, in nests, or in grassy areas, such as fields, where they are easily seen.

Other locations to check include under stones, rocks, old boards, or other materials lying on the ground.

If you don't fancy eating insects raw, you grind a collection of insects into a paste and cook them up with some type of edible vegetation.

You can cook them to improve their taste.

Worms

Worms are another excellent, if unappetizing, protein source. You can dig for them in damp soil, or wait for them to come to the surface after a rainfall, as many birds do.

Before eating them, simply drop them into clean, potable water for a few minutes – they will naturally purge and wash themselves out, making them safe to eat.

Crustaceans

Many foods we relish eating, such as shrimp, lobster and crabs are crustaceans.

In the wild, you will find freshwater shrimp – they range in size from tiny (0.25 centimeter) up to a decent size (2.5 centimeters). Freshwater shrimp can be found in large colonies in mats of floating algae or in mud bottoms of ponds and lakes.

Crayfish are another great crustacean food source, similar to marine lobsters and crabs. They have a hard exoskeleton and five pairs of legs, the front ones with oversized pincers.

Although crayfish are nocturnal, you can find them during the day by looking under and around stones in small streams.

Saltwater lobsters, crabs, and shrimp spend a lot of time at the surf's edge out to a depth of around 10 meters.

To catch shrimp, shine a light onto the water at night – they will be drawn to the light, and you can scoop them up with a net.

Lobsters and crabs can be caught with a baited trap or a baited hook. As they are nocturnal, they are best caught best at night.

Mollusks

There are lots of different mollusks in lots of different locations –they include everything from octopuses and freshwater and saltwater shellfish to snails, clams, mussels, barnacles, periwinkles, and sea urchins.

River snails or freshwater periwinkles are plentiful in rivers, streams, and lakes in the northern hemisphere, and are either pencil point or globular in shape.

Fresh water mollusks are found in the shallows, especially in water with a sandy or muddy bottom.

Saltwater mollusks are best in tidal pools and wet sand, or in the rocks along beaches. Snails and limpets cling to rocks and seaweed from the low water mark upward, while large snails, called chitons, attach themselves to rocks above the surf line.

Mussels can be found in tightly packed colonies in rock pools, on logs, or at the base of boulders.

However, be aware that mussels may be poisonous in tropical zones during the summer, and that you should also avoid shellfish that are not covered by water at high tide.

Mollusks can be steamed, boiled, or baked in the shell, and make a wonderfully flavorful addition to stews.

Fish

Fish are a great source of protein and fat, but to catch them you need to know their habits.

For example, while fish tend to feed heavily before a storm – making it more likely that they will take your bait – they are much less likely to feed after a storm when the water is muddy.

In areas where the current is strong, fish will rest in eddies, near rocks, in still, deep pools, under overhanging branches, and in and around submerged logs.

While there are no poisonous freshwater fish, you should still cook all freshwater fish to kill parasites. It is also advisable to cook any saltwater fish caught close to land as they may have parasites from freshwater sources.

Amphibians

Popular, of course, in France, frogs (and salamanders) are easily found in and around fresh water such as ponds and small lakes – in fact, frogs seldom stray very far from the safety of the water's edge.

While there are few poisonous species of frogs outside of the tropics, several species of toads secrete a poisonous substance through their skin. Thus it is best to avoid handling or eating toads – toads are normally found in drier environments than frogs.

Salamanders are nocturnal, and are best caught at night – they can be found in water around rocks and mud banks.

Reptiles

Reptiles are another good protein source, but as their flesh may transmit parasites, it is always best to cook them.

There are some to avoid, including:

- Box turtles – because they feed on poisonous mushrooms they can build up a highly toxic poison in their flesh which even cooking does not destroy.
- Hawksbill turtles – found in the Atlantic Ocean, because of its poisonous thorax
- Poisonous snakes

In addition, reptiles such as alligators, crocodiles, and large sea turtles present obvious hazards.

Birds

All birds are edible, although the taste can vary widely from one to another.

Knowing the habits of the birds in your area will dramatically increase your chances of catching them.

For example, pigeons, and some other species, can simply be taken from their roost at night by hand. In addition, during the nesting season, there are many species that will not leave the nest even when directly approached.

Many birds have regular paths (flyways) from their roost to their feeding Areas – learning these flyways will allow you to catch birds in nets stretched across the flyways.

In addition, learning where the roosting sites and nesting sites are waterholes will allow you to add bird's eggs to your diet. When you take eggs from a nest, remove all but two or three eggs, and mark the ones that you leave behind – the bird will continue to lay more eggs to fill the clutch, and you can return and remove the fresh eggs, leaving the ones you marked.

Mammals

While mammals are the source of protein many of us are most familiar with, they can be difficult and problematic to catch.

Even the smallest are equipped with teeth and claws, and will use them in self-defense. In addition, if you are trying to catch larger prey, the amount of injury an animal can inflict is in direct proportion to its size!

Even a squirrel bite presents a serious risk of infection.

TRAPS AND SNARES

Traps and snares, if well placed, are far more effective than even a rifle – and they are renewable. To be effective with any trap or snare, you must:

- Be familiar with the animal you are hunting
- Be able to construct a proper trap
- Leave no signs of your presence

Traps have to be designed specifically for the animals in your area. When setting traps, look for the following:

- Clear runs and trails
- Tracks
- Droppings
- Chewed or rubbed vegetation
- Nesting or roosting sites
- Feeding and watering areas

Unless you position your traps and snares where there is proof that animals pass regularly, they will fail. Animals have bedding areas, waterholes, and feeding areas, and there will be a network of trails leading from one to another – your job is to find them and set your traps along them.

If you create a disturbance while setting your trap you will alarm the animals, and they will avoid the area.

Therefore, if you must dig, remove all fresh dirt from the area. The key is to prepare the various parts of your trap or snare away from the site, then carry them in and set them up.

You should also avoid freshly cut, live vegetation to construct a trap or snare – it will “bleed” sap, creating an odor that your prey will smell and avoid.

Animals use smell extensively, so you must disguise or remove your scent from the trap. The ways of doing this include:

- Masking it with fluid from the gall and urine bladders of previous kills
- Kills – Do not use human urine
- Mud from an area with rotting vegetation is a good scent mask – smear it on your hands when handling the trap, and coat the trap with mud when setting it
- Smoking the trap parts is another effective way to mask your scent – although animals are alarmed by a burning fire, the smell of old smoke does not alarm them.

To increase the chances of animals actually entering your traps or snares, you can build a channel, a funnel-shaped barrier that extends from the sides of the trail toward the trap, gradually narrowing as it nears the trap.

Although the channel should be inconspicuous – to avoid alerting your prey – animals will follow it. Few animals will back up once they have reached a constricted area. Rules for a channel include:

- Make it inconspicuous
- It does not have to be an impassable barrier – simply something that is inconvenient for the animal to go over or through
- It should reduce the trail’s width to just slightly wider than the targeted animal’s body
- It should be at least as long as the animal’s body
- It should widen towards the mouth of the funnel

Bait

Baiting is of course essential when catching fish, but it can also increase your chances of success when trying to trap animals.

A baited trap can actually draw animals to it, but to be successful it should:

- Be a food the animal knows
- Not readily available nearby
- You should scatter bits of it around the trap to give the prey a chance to sample it and develop a craving for it

One exception to the first rule is peanut butter, which almost all animals seem to be attracted to!

Trap and Snare Construction

Traps and snares of all kinds work to crush, choke, hang, or entangle your prey. Many of the most effective ones will incorporate two or more of these principles.

Typically it is the struggling of the victim, the force of gravity, or the tension of a bent twig or branch that provides the power to kill or capture your prey.

Whichever technique the trap or snare uses, the trigger is the most crucial part.

Let's look first at snares, which are simply traps that use a noose to capture or kill the prey.

Simple Snare

A simple snare is a noose placed over a trail or den hole, and attached to a firmly planted stake.

The key is to find a discrete way to hold the noose open – the options include small twigs, blades of grass, even filaments from spider webs. The noose must be large enough to pass freely over the animal's head.

As the prey moves and struggles the noose tightens around its neck – the more the animal struggles, the tighter the noose becomes. However as this type of snare usually does not kill the animal, you will have to be prepared to dispatch it yourself.

As cord can loosen enough to slip off the animal's neck, wire is the best choice for a simple snare.

Drag Noose

Drag nooses are ideal on animal runs.

Place forked sticks on either side of the animal's run, with a sturdy cross member between them.

The noose attaches to the cross member, and hangs at head height – if it is too low the animal will step in it.

When the animal runs through the noose, it will tighten and dislodge the cross member, which will then be dragged along through the surrounding vegetation. It will quickly become caught, and the animal will be entangled.

Twitch-Up

Twitch-ups use the power of a supple sapling, bent over and secured with a triggering device. Best choices are hardwood saplings along the edge of a trail.

To make a twitch-up work faster and with more force, be sure to remove all the branches and foliage.

Twitch-ups can be used to set a variety of snares.

Some of the snares and traps you can learn how to use include:

- Squirrel poles
- Ojibwa bird pole (a native Americans snare)
- Noosing wands
- Treadle snares
- Figure 4 deadfall traps
- Paiute deadfalls
- Bow traps
- Pig spear shafts
- Bottle traps

Remember, you cannot simply learn these techniques from a book or a video – you have to learn how to actually construct them, then practice making and using them.

If you can't successfully use them to catch prey now, there is no reason to think that you will be any more successful when you are hungry and desperate,

Take caution if you are practicing these techniques, as many authorities don't take kindly to people setting traps and snares in public parks, or trapping and killing domestic pets such as small puppies!

KILLING DEVICES

An alternative way of securing fresh meat is with any of the killing devices that you can construct. These include the rabbit stick, the spear, the bow and arrow, and the sling.

Rabbit Stick

A simple and effective killing device when used properly. The rabbit stick is simply a stout stick, about as long as your arm, from fingertip to shoulder.

It can be thrown either overhand or sidearm, and is very effective with small game, such as rabbits, the stop and freeze as a defense.

Spear

A spear can be used to kill small game and fish – it is designed to be used at close range, jabbing with the spear, not throwing it.

Bow and Arrow

You can make a bow yourself, although it takes quite a lot of work. The beauty of a bow you have made yourself is that you can replace it yourself fairly easily.

To make your own bow, choose a hardwood stick about one meter long that is free of knots or limbs. Dead, dry wood is a better choice than green wood.

Examine the stick carefully and you will find the natural curve of the stick. You will need to scrape the large end down until it has the same pull as the small end, but be sure to always scrape from the side that faces you, or the bow will break the first time you pull it! Finally, attach cord to the tips of the bow.

Arrows need to be made from the straightest dry sticks available, and should be about half as long as the bow.

You will need to scrape each shaft smooth all around, and straighten them. The easiest way to bend an arrow straight is by heating it over hot coals.

Warm the shaft, then hold it straight until it cools – be sure not to scorch or burn the shaft.

Arrowheads can be made from bone, glass, metal, or pieces of rock, or for a simple arrowhead, you can sharpen and fire hardens the end of the shaft. Again, this is done by holding it over hot coals, being careful not to burn or scorch the wood.

The ends of the arrows will need to be notched for the bowstring – do this by cutting or filing the notch – do not split it.

Adding a fletch made from feathers will make the arrow fly truer, but can be quite tricky to do and is not necessary.

Sling

One of the simplest devices to make, a sling can be highly effective, as David so clearly demonstrated when bringing down Goliath!

A simple sling is made for two pieces of cord, about sixty centimeters long, tied at opposite ends of a palm-sized piece of leather or cloth.

To use the sling, place a rock in the cloth and wrap one cord around your middle finger and hold the other cord between your forefinger and thumb.

Spin the sling in a circle several times then release the cord that is held between your thumb and forefinger.

When you first practice using a sling it will likely be spectacularly ineffective, but with patience and practice you can become very skilled, and will find it very effective against small game.

FISHING DEVICES

If you have any kind of lake, river, or ocean nearby, fish can provide a fantastic source of food.

With a little ingenuity and patience you can easily make your own fishhooks, nets and traps, offering you several different methods to obtain fish.

Improvised Fishhooks

If you don't have any fishhooks, you can make them from a variety of materials, including:

- Pins
- Nails
- Needles
- Wire
- Small pieces of metal
- Wood
- Bone
- Coconut shell
- Thorns
- Seashell
- Tortoise shell

Stakeout

A stakeout is a passive fishing device that you can set and leave. Like traps and snares, you will need to come and check on it regularly.

A stakeout is made from two supple saplings driven into the bottom of the lake, pond, or stream, with their tops just below the surface of the water – make sure you remember where you leave your stakeout!

Tie a cord between the stakes, and attach two short cords with hooks to the chord. Bait the hooks, and then leave them alone for a while!

Fish Traps

The simplest type of fish trap is a fish basket. They are made by lashing several sticks together, using vines, to create a funnel shape. The top should be just large enough for the fish to swim through.

Spearfishing

If you have access to shallow water where fish are large and plentiful, spear fishing is an effective method of catching them.

Make a spear from a long, straight sapling, with either a sharpened end, or a knife, jagged piece of bone, or piece of sharpened metal attached.

When you are spear fishing you do NOT throw the spear. To spear fish, find an area where fish either gather or where there is a fish run.

Walk slowly through the water with the spear point in the water. As you approach the fish, slowly move the spear towards the fish. Then, with a sudden thrust, impale the fish on the stream or lake bottom.

If you try to lift the fish with the spear, it will probably slip off – instead, hold the spear with one hand and grab and hold the fish with the other.

Chop Fishing

A night time technique, it sounds pretty unsubtle, but it can work!

Using a light to attract fish – they will often swim to investigate it – you simply hack at them with a machete or similar weapon. If you use the back side of the blade to strike them you will stun them but not hack them in two.

PREPARING FISH AND GAME

There is no point catching fish and game if you don't know what to do with it. Knowing how to cook and store what you catch is therefore essential in a survival situation. Improper cleaning or storage can easily result in inedible fish or game, wasting valuable time and energy.

Fish

The first rule is to never eat fish that appears spoiled – be aware that simply cooking spoiled fish does not make it edible.

Signs of spoilage include:

- Sunken eyes
- A strange odor
- Suspicious color (Normally, gills should be red to pink, while the scales should be a pronounced shade of gray, not faded.)
- Dents stay in the fish's flesh after pressing it
- The body is slimy, rather than moist or wet
- It has a sharp or peppery taste

Eating spoiled or rotten fish will quickly make you sick – typically within one to six hours after eating it – and can cause diarrhea, nausea, cramps, vomiting, itching, even paralysis.

While fish is wonderful when it is fresh, it spoils quickly after death, especially in hot weather. It is therefore best to prepare fish for eating as soon as possible after catching it.

To prepare fish, cut out the gills and large blood vessels that lie near the spine. Any fish more than 10 centimeters long should also be gutted. Finally, scale or skin the fish.

There are, of course, various ways to cook fish. Impaling a whole fish on a stick and cooking it over an open fire is a tasty way to prepare it, but boiling the fish with the skin on retains the most nutrition.

When you boil fish, the valuable fats and oil that lie under the skin are preserved in the broth.

Other methods of cooking fish include packing it into a ball of clay and bury it in the coals of a fire until the clay hardens.

When you break open the clay ball, the meat should simply flake off.

If you want to preserve the fish for later you will need to smoke it – be sure to remove the head and backbone before smoking it.

Preparing and Eating Other Animals:

Snakes

Snakes must be skinned. First cut off the head and either burn it or bury it. To skin a snake, cut the skin down the body, peel the skin back, then grasp the skin in one hand and the body in the other and pull them apart.

Remove the guts, then cut the snake into small sections and boil or roast it.

Birds

Feathers must be removed, either by plucking or skinning. Cut open the body and remove the entrails – saving the heart and liver if you are able to identify them – and cut off the feet.

You can cook birds by boiling them or roasting them over a spit. If you are eating a scavenger bird, be sure to boil it for at least 20 minutes to kill any parasites.

Skinning and Butchering Game

The first step is to bleed the animal – you do this by cutting its throat.

To cut the hide, insert the knife blade under the skin and turn the blade up so that only the hide gets cut. This will also stop hair from getting into the meat.

The hide is best removed if the carcass is belly up – split the hide from throat to tail, cutting around the sexual organs.

With small mammals you can simply insert two fingers under the hide on both sides of the cut and pull both pieces off.

You will need to remove the entrails – again, with smaller game you simply split the body open and pull them out with the fingers.

With larger game you will need to cut the gullet away from the diaphragm and roll the entrails out of the body. Next, cut around the anus, then reach into the lower abdominal cavity, grasp the lower intestine, and pull it out.

The bladder can be removed by pinching it off and cutting it below the fingers. If any urine spills on the meat, be sure to wash it off to avoid tainting the meat.

The heart and liver are a great source of nutrition, but can be diseased. Cut them open and inspect them for signs of worms or other parasites. Color is also a good indicator for the liver – it should be smooth and wet, with a deep red or purple color. If it appears diseased, discard it – but be aware that a diseased liver does not mean that you can't eat the muscle tissue.

With the innards removed, cut along each leg from above the foot to the body, then remove the hide by pulling it away from the carcass, cutting any connective tissue where necessary.

Once the carcass is skinned, cut off the head and feet and cut the meat into manageable pieces.

The legs are easy to remove – when you slice the muscle tissue connecting the front legs to the body the legs will come away – there are no bones or joints connecting the front legs to the body.

The rear legs should be cut where they join the body – you will need to cut around the hip joint to free the hind legs from the ball and socket hip joint.

The large muscles along the spine (the tenderloin) should be cut away, and the ribs separated from the backbone. You can snap the ribs then cut through any remaining adhesions.

Large chunks of meat can be spit roasted or boiled, while smaller pieces or bones can be stewed or boiled. Body organs, such as the heart, liver, pancreas, spleen, and kidneys, can be cooked the same way, as can the brain and the tongue.

Be aware that skinning and preparing a carcass, particularly a large one, is not only time consuming but messy. If possible, clean the carcass near a stream to make the clean up easier, and to avoid despoiling your campsite.

You will also need to find an appropriate way to dispose of the hide, guts, etc, so that you don't attract predators and scavengers to your camp area.

Smoking Meat

Smoking meat is a great way to fully utilize a large carcass, or to prepare for the future at times when game is plentiful.

Hardwoods are the ideal wood for smoking meat as they produce good smoke. The wood should be somewhat green – if it is too dry, soak it in water first. The fire does not need to be big or hot; the aim is to produce smoke, not heat. Avoid using resinous wood, as the smoke will ruin the meat.

Cut the meat into thin slices, no more than 6 centimeters thick, and drape them over a framework above the fire. Ensure that none of the meat touches another piece.

To contain the smoke you will need to build a simple enclosure around a fire – something as simple as two ponchos snapped works well.

You will need to constantly tend the fire to be sure that it doesn't get too hot. Good smoked meat will be dark, like a brittle stick, and can be eaten without further cooking.

Meat smoked overnight should last about 1 week, while two days of continuous smoking will preserve the meat for 2 to 4 weeks.

Drying Meat

Meat can be preserved by drying in warm, dry climates. As before, cut it into 6-millimeter strips, and hang the meat strips on a rack in a sunny location with good air flow.

You will have to keep watch over the meat – not only will animals want to eat them, but you will have to cover them to keep blowflies off.

The meat should be thoroughly cooked before eating, and should have a crisp, dry texture.

Other Preservation Methods

Other techniques for preserving meats are freezing or the use of brine and salt.

Freezing

Frozen meat will keep indefinitely, but you will still need to cook it before eating it.

Brine and Salt

If you have access to salt or salt water, you can preserve meat by soaking it thoroughly in a saltwater solution.

If you are soaking it, the saltwater solution must cover the meat.

Alternatively you can use salt itself, rubbing it thoroughly into the meat. Be sure to wash the salt off before cooking the meat.

USE OF PLANTS

The use of edible plants is a contentious one for untrained people – it takes considerable skill and training to learn which plants are edible and safe, and mistakes can be costly.

However, with the right plants you can have a ready source of medicines, weapons, raw materials to construct shelters and build fires, chemicals for poisoning fish or preserving animal hides, and of course a ready source of nutritious food to support a healthy diet.

Plants are widely available, easily procured, and will help you to meet all your nutritional needs.

On the other hand, plants like poison hemlock can easily be mistaken for their relatives, wild carrots and wild parsnips - people have died from making this mistake.

It is therefore important to take the time to learn the plant life of the region in which you will be living.

Be aware that even safe plants can sometimes cause stomach upsets when eaten in large portions on an empty stomach - green apples and wild onions are good examples of this. Thus even after testing, only eat individual plant foods in moderation.

In order to avoid potentially poisonous plants, completely avoid any wild or unknown plants that have:

- Milky or discolored sap
- Beans, bulbs, or seeds inside pods
- A bitter or soapy taste
- Spines, fine hairs, or thorns
- Dill, carrot, parsnip, or parsleylike foliage
- “Almond” scent in woody parts and leaves (they can contain arsenic)
- Grain heads with pink, purplish, or black spurs
- Three-leaved growth pattern

If no doubt, err on the side of caution.

Seaweeds

One plant that can make an excellent part of your diet is seaweed. It is a valuable source of iodine, other minerals, and vitamin C. Eat it in small quantities, however, as large amounts of seaweed can have a powerful laxative effect!

When choosing seaweed to eat, avoid seaweed that has been washed ashore for any length of time – the freshest source will be living plants attached to rocks or floating free.

Seaweed is easily prepared – you can simply dry the thin types in the sun or over a fire until they are crisp, or crush them up and add them to soups or broths.

The thick, leathery seaweeds will need to be boiled for a short time to soften them up.

Preparation and Cooking Plant Foods

While you can eat some plants or plant parts raw – most fruits for example – others will need to be cooked to make them edible or palatable.

Learning which plants need soaking, boiling, cooking, or leaching will dramatically improve both the taste and the usefulness of many plant foods.

General rules for preparing and cooking plant foods include:

- Boil leaves, stems, and buds until tender to remove any bitterness
- Boil, bake, or roast tubers and roots
- Leach acorns in water to remove the bitterness
- Some nuts, such as chestnuts, are good raw, but most taste better roasted.
- You can eat many grains and seeds raw until they mature

- Hard, dry grains and seeds may have to be boiled or ground into a meal or flour
- The sap of many trees – for example maple, birch, walnuts, and sycamores – contains sugar. You can boil them down to a syrup, but be aware that it takes around 35 liters of maple sap to make one liter of maple syrup!

POISONOUS PLANTS

Knowing which plants are poisonous depends entirely on positive identification. Learning about the poisonous plants in your area will help you avoid them.

Unfortunately, there are no hard and fast rules about which plants are poisonous and how you avoid them – you just have to learn it.

While some plants need extensive contact with a large amount of it before producing adverse reactions, others can cause death from only a small amount of exposure – each plant varies in the amount of toxins it contains, and every person has a different level of resistance to the different toxic substances.

Some individuals may be more sensitive to a particular plant.

There are numerous myths and misconceptions about poisonous plants, including:

- *Watch animals and eat what they eat: While this is true most of the time, some animals can eat plants that are poisonous to humans.*
- *Boiling a plant in water will remove any poisons: While boiling removes many poisons, it does not remove all.*
- *Red plants are poisonous: Again, while some red plants are poisonous, this is not true of all red plants – and of course, there are many poisonous plants that are not red.*

The bottom line is that you need to learn as much about plants as possible to ensure your safety and survival, and to allow you to take advantage of the many benefits they can confer in a survival situation.

DANGEROUS ANIMALS

Although people often worry about wild animals, they are rarely a major threat to survival.

Of course there are plenty of wild animals in the world, such as bears, that can be dangerous, but in reality they typically avoid humans.

On the other hand, it is worth avoiding large grazing animals with horns, hooves, and a lot of weight to throw around!

If you are in a wilderness situation, there is much you can do to avoid attracting large predators to your camp – don't leave food lying around, for example. You should also always remain alert, carefully surveying the scene before entering areas like forests, or indeed water.

Of more immediate concern are smaller, well equipped creatures such as small venomous snakes, bees, and spiders. These are potentially more dangerous to you, and are the animals you are more likely to meet, as you move through their habitat.

INSECTS AND ARACHNIDS

The world's most populous species; there are numerous types that can sting, bite, or irritate you.

In general, only those who are directly allergic to bee, wasp, and hornet stings will suffer anything more than a painful, localized sting. In fact, even most dangerous spiders rarely kill, while the effects of tick-borne diseases are very slow-acting.

Having said that, it is still worth being prepared and aware in order to avoid encountering these types of problems.

Checking your shoes and clothing every morning for spiders and scorpions is simply common sense, as is checking your bedding and shelter each time you climb in. You should also be careful whenever you are turning over rocks and logs.

Scorpions

Scorpions live in deserts, jungles, and tropical, subtropical, and warm temperate forests. They are mostly nocturnal, and can be found from sea level to altitudes as high as 3,600 meters.

While most are brown or black, in more humid areas they can be yellow or light green in the desert. Their size varies widely.

Fortunately fatalities from scorpion stings are rare – they are most dangerous to those who are already vulnerable, such as children, the elderly, or people with another, existing illness.

Spiders

Most Americans are aware of the brown recluse or fiddleback spider, and the black widow.

The bite of the brown recluse is rarely fatal, but it is necrotic – that is, it causes tissue death around the site of the bite. If left untreated it can lead to amputation of the damaged area.

Widow spiders are found in warmer areas throughout the world. They are small, dark spiders, often with a distinctive hourglass-shaped white, red, or orange spot on their abdomen.

Symptoms of their bite includes severe pain, sweating and shivering, and weakness, and can last for anything up to a week.

Centipedes and Millipedes

Most centipedes and millipedes are small and harmless, although a few varieties of centipede have a poisonous bite.

Bees, Wasps, and Hornets

Bees, wasps, and hornets can be found in many varieties, and in a wide diversity of habitats.

Bees such as honeybees live in colonies, and are either domesticated, or live wild in caves or hollow trees. Other types of bees, such as carpenter bees, live in individual nest holes in wood or in the ground.

Avoiding bees is the best tactic – avoid fruit or flowers where they may be feeding. Be aware also that yellow jackets will be attracted when you are cleaning fish or game.

Most people have a localized and minor reaction to bee stings. If, however, you know that you are allergic to bee venom, and have severe reactions, now is the time to obtain some antihistamine medicine.

Keep it with you at all times, and make sure that the other members of your group know where it is and how to administer it.

Ticks

Ticks are small round arachnids with eight legs and either a soft or hard body – they are common in both the tropics and more temperate regions.

Ticks require a blood host to survive and reproduce, and will happily attach to either humans or animals. They can carry diseases like Lyme disease, Rocky Mountain spotted fever, and encephalitis.

All of these diseases can ultimately be disabling or fatal, so there is little you can do once you have contracted them.

If you spend time in areas of thick vegetation, cleaning host animals for food, or gathering natural materials to construct a shelter, you should do a tick check afterwards.

It takes at least 6 hours of attachment to the host for the tick to transmit the disease organisms, so conducting a thorough tick search is the most effective way to avoid infection.

A tick search should include your whole body, with particular attention paid to dark moist areas like your armpits and groin, where they can burrow into the hair and avoid detection.

If you find a tick, grip it firmly all the way down to your skin, and pinch and twist to remove it. It's far better to remove a tiny bit of your skin than to leave part of the tick behind – if their head remains in your skin, it can easily become infected.

If so, treat it with a strong antibiotic ointment or cream.

Leeches

Leeches are the curse of the tropics, and are also found in temperate zones. They're blood-sucking creatures with a wormlike appearance, and you can encounter them swimming in infested waters or wading through swampy areas.

When hiking through swamps and bogs you can reduce the chances of them attaching to you by keeping your trousers tucked in your boots.

They are also dangerous if swallowed or eaten, as they can attach inside you and cause internal infections – thus any water from questionable sources should be treated by boiling it or using chemical water treatments.

Bats

The threat from bats is not that they will attack and bite you in the night - despite the legends and scary movies.

The greatest danger comes from taking shelter in a cave occupied by bats. Inhaling powdered bat dung – guano – is a health risk as it carries many organisms that can cause diseases.

Poisonous Snake's

Poisonous snakes are found all over the world, and the best tactic is simply to leave them well alone!

Guidelines to avoiding snakes include:

- Walk carefully and watch where you step
- Step onto logs rather than over them – snakes shelter beneath them
- Look closely when picking fruit or moving around water
- Use a stick to turn logs and rocks when looking for food
- Always wear proper footwear, especially at night
- Carefully check bedding, shelter, and clothing before using

DANGERS IN BAYS AND ESTUARIES

It pays to keep a sharp eye out when foraging in areas where seas and rivers come together.

Walking in shallow salt waters you can encounter many creatures that can inflict pain and cause infection to develop.

One of the most painful creatures to encounter are sea urchins – stepping on them will produce a painful infection.

Stingrays are another hazard in shallow waters, with the sharp spike on their tail able to cause extremely painful – even fatal –wounds if stepped on.

When walking in shallow water, wear some footgear, and shuffle your feet along the bottom, rather than picking them up and stepping.

SALTWATER DANGERS

The ocean is a bountiful source of natural food, but it also has its dangers. These include fish such as sharks that might attack you, and various types of fish that are dangerous to eat.

As mentioned before, you should take the time to learn about the fish that are typically found in your region, so that you know what is safe and what is potentially dangerous.

Another threat that can be found in many ocean regions of the world is jellyfish. While jellyfish stings are rarely fatal, their sting is extremely painful.

The most dangerous is the Portuguese man-of-war – it looks like large pink or purple balloon, and has poisonous tentacles that hanging down up to 12 meters below its body.

The simple rule is to avoid the tentacles of any jellyfish, even those that have washed up on the beach and appear to be dead.

COLD WEATHER SURVIVAL

Most plausible 2012 scenarios point to the likelihood of an increasingly cold climate, whether due to disruption of the Gulf Stream, or perhaps an event such as the eruption of a super volcano such as the one that lays under Yellowstone.

Cold weather is survivable, but it does add an element to your survival strategy that needs constant attention. With a good understanding of this environment, sensible planning, and the right equipment, cold weather is highly survivable.

However, simple mistakes can easily undermine your survival in the cold – it can be an insidious enemy. Cold decreases your ability to think clearly, and weakens your will to act. It slows you physically and mentally until you are happy to just do nothing – at that point death becomes a likely outcome.

There are two types of cold you need to be prepared to deal with – dry cold and wet cold.

Wet Cold

Wet cold weather is defined not so much by the location per se, as by the conditions. Wet cold weather exists when the average temperature in a 24-hour period is -10 degrees C or above.

This can lead to a characteristics pattern of freezing during the colder night hours and thawing during the day.

The result is slushy, wet conditions, with lots of mud. Survival depends on protecting yourself from the wet ground, and from freezing rain or wet, slushy snow.

Dry Cold

Dry cold weather conditions occur when the average temperature over a 24-hour period remains below -10 degrees C.

When temperatures stay this low, you do not have to contend with the problems associated with freezing and thawing.

You will obviously need more layers of inner clothing to protect you from extreme cold – temperatures as low as -60 degrees C can be experienced.

Danger is increased when wind and low temperatures combine to send the wind adjusted temperature plummeting. This is referred to as windchill, and is a major hazard in cold climates.

The effect of moving air on exposed flesh can greatly magnify the actual air temperature. Windchill can be due to the actual wind, or the wind you create when running, skiing, being towed on a sledge and so on.

Cold Weather Survival

There are many different types of highly effective cold weather equipment and clothing on the market today. Modern, lightweight gear such as polypropylene underwear, Gore-Tex outerwear and boots, ski gloves and goggles can all make surviving cold weather much more likely, and more comfortable.

Less technical gear will still work effectively to keep you warm as long as you apply a few basic cold weather principles. One of the most effective low-tech materials is wool – it has the priceless ability to stay warm even when wet.

Despite the fallacy behind the urban myth that you lose 40 to 45 percent of your body heat from an unprotected head, it is still worth keeping all parts of your body covered in cold weather – heat can easily leach away from exposed areas, whether it is your head, or your neck, wrists, or ankles.

Losing heat means your body needs to replace that heat, which requires more food. Thus unnecessarily losing body heat ultimately means that you have to obtain and consume more food – given the difficulties that cold weather can often create in obtaining food, this is a serious issue.

There are four basic principles that will help you deal effectively with cold weather:

- ***Keep clothing clean:*** *Aside from being a basic principle of good health – and thus survival – it is doubly important in winter. Clothes that are caked with dirt and grease lose much of their insulation value, wasting valuable heat.*
- **Avoid overheating:** Sweat is to be avoided during cold weather. When you get too hot and begin to sweat, your clothing absorbs the moisture. This creates two problems. Firstly, the moisture reduces the insulation quality of the clothing, and secondly, as the

sweat evaporates, your body cools down. If you are active, adjust your clothing so that you don't overheat and begin to sweat. You can do this by opening your jacket, removing an inner layer of clothing, taking off your gloves, or removing head gear, such as a woolen hat or a heavy parka hood.

- **Clothing should be loose and in layers.** Tight clothing and footwear should be avoided as it restricts blood circulation and increases the chance of cold injury. It is also inefficient, as it reduces the space between layers – this is where warm air gets trapped, keeping you warm. Thus several layers of lightweight clothing are far more effective than thick layer of clothing, because the dead air space between the layers provides valuable insulation. Layered clothing also makes it far easier to add and remove layers as your activity level and body temperature changes.
- **Keep clothing dry.** Wet clothes are one of the biggest dangers in cold weather. When your inner layers of clothing become wet from sweat, they lose their insulative value. In addition, your outer layer, if it is not water repellent, can become wet from snow, rain, and frost melted by body heat. Water repellent outer clothing is thus a necessity – it will simply shed most of the water that lands on it. To help it work more effectively, brush off snow and frost as it accumulates, and keep it as clean as possible – outer layers lose their water repellency as they get dirty.

Drying Wet Clothes

It is inevitable that despite your best efforts, your clothes will get wet at times. Drying your clothing can present quite a problem at times.

If it is not actually raining or snowing, you can hang items out to dry in the wind and sun. Small items like socks or mittens, as long as they are not too wet, can be dried by leaving them near your body so that your body heat dries them. You can also hang damp clothing inside your shelter on drying lines, or carefully dry items by holding them in front of an open fire.

If leather items like boots become very wet, be sure to dry them slowly by the fire.

One item you want to protect from wet is your sleeping bag. The ultimate cold weather friend is a heavy, down sleeping bag – however,

you have to ensure that the down remains dry, as it loses much of its insulative value if it gets wet.

COLD WEATHER HYGIENE

Washing can become impractical or at least uncomfortable in cold weather, but it is still a vital part of your long term health. Regular washing, however you achieve it, prevents small problems like mild skin rashes from developing into more serious problems.

One option in cold weather is to take a snow bath – it's cold but effective! Simply take a handful of snow, and rub as much of your body as possible. Be sure to wash your face, hands and feet, and also those areas of your body where sweat and moisture accumulate, such as under your arms and between your legs. When you are done, wipe yourself dry then get dressed as soon as possible to preserve body heat.

It is also important to change your clothes regularly. Even though you may not be sweating, you should still wash your feet daily and put on clean, dry socks, and change your underwear at least twice a week.

If you are unable to wash items like underwear, you can still remove them and let them air out for a while.

COLD WEATHER SHELTERS

We have discussed shelter building previously, but it is worth considering the following for cold weather shelters:

- Even in very cold weather, you still need to ventilate an enclosed shelter, especially if you intend to use a fire in it.
- Block the entrance to the shelter to keep the heat in and the wind out – you can use undergrowth, your backpack, a pile of snow etc to block the entrance.
- Keep your shelter small in cold weather – if it is too large, all your body heat will dissipate.
- Pile snow around the sides of your shelter for added insulation
- Never sleep directly on the ground – always lay something beneath you. Pine boughs, grass, your clothing, your backpack, anything to stop your body heat leaching away into the ground.
- Never fall asleep with your stove or lamp on. Carbon monoxide poisoning can be fatal.

Carbon monoxide is colorless and odorless, and can be generated by any open flame. There are often no symptoms of carbon monoxide poisoning – loss of consciousness and death can occur without warning.

Indicators of the onset of carbon monoxide poisoning can include pressure at the temples, burning eyes, a headache, pounding pulse, drowsiness, or nausea may occur. There is one visible sign of carbon monoxide poisoning – a cherry red coloring of the lips, mouth, and inside of the eyelids.

If you experience any of these symptoms around an open flame in a confined space, get out into fresh air immediately.

FIRE

Fire becomes particularly important in cold weather. It will help you to prepare your food, melt snow or ice for water, and keep warm. It can also be a wonderful psychological boost, making you feel safe, secure, and in control of your environment.

Because you will often be confined in a limited space in winter, a small fire and a stove provide the best combination for both cooking and heating purposes.

For cooking, a small fire, about the size of a man's hand, is ideal. It requires very little fuel, is hot enough to warm liquids, and yet generates considerable warmth. Indeed, in a small, enclosed shelter, a single candle can provide a significant amount of heat.

WATER

Obtaining water in cold temperatures can present different problems. While water from snow may be more sanitary than other sources, you should still purify all water before drinking it.

Freshwater ice and snow can be melted for drinking water, but should not be put in your mouth unthawed – trying to melt ice or snow in your mouth not only takes away body heat, but may also cause internal cold injuries.

If you have a choice between ice and snow as a water source, use ice rather than snow. One cup of ice yields more water than one cup of snow and takes less time to melt.

You can melt ice or snow in a water bag between your layers of clothing, or by placing it in a container on or near a fire.

Start with a small amount of ice or snow in your container and, as it turns to water, add more ice or snow.

Once you have melted your ice or snow, keep it next to you to prevent it refreezing. Also, if you leave some space in your canteen, the water can slosh around, which will help prevent it from freezing.

Finally, avoid drinking a lot of liquids before going to bed – having to get up out of your warm bed in the middle of the night to relieve yourself is a good way to lose a lot of body heat.

TRAVEL

Cold weather presents its own set of travel problems. Issues to be aware of include:

- Blizzards – avoid traveling during a blizzard, it's easy to get lost – in “whiteout” conditions the lack of contrasting colors makes it impossible to judge the nature of the terrain.
- Be careful crossing thin ice – if it is absolutely necessary you can make it safer by lying flat and crawling to distribute your weight more evenly.
- If you must cross streams, do so when the water level is lowest. The normal freezing and thawing process can cause a stream level to vary by several meters per day. This variance may occur any time of day, depending on the distance from a glacier, the temperature, and the terrain. Be aware of this variation in water level when selecting a campsite near a stream.
- If you are traveling make camp early, giving yourself plenty of time to build a shelter.
- Travel in the early morning in areas where there is danger of avalanches.

You will find that it is almost impossible to travel in snow deeper than 30 centimeters without snowshoes or skis. If you don't have snowshoes, you can make a pair using willow, strips of cloth, leather, or other available material.

PREDICTING THE WEATHER

Learning some simple indicators of climatic changes can help you to deal with harsh weather conditions better.

Wind

Wind can tell you much about the coming weather. Wind direction is easy to figure out – you can watch the treetops, or drop a few leaves or blades of grass to see which way the wind is blowing.

Rapidly shifting winds are a sign that the atmosphere is unsettled, and the weather is likely to change.

Clouds

Learning about different types of clouds will help you to predict the weather far more accurately.

Smoke

Observe the smoke from your campfire. If it rises in a thin vertical column it indicates fair weather. If, however, it flattens out, it indicates stormy weather on the way.

Birds and Insects

Birds and insects tend to fly lower to the ground than normal when the air is heavy and moisture-laden – such activity thus indicates that rain is likely.

Insects are also more active as a storm approaches – bees; on the other hand, increase their activity levels when fair weather is imminent.

Low-Pressure Front

Low pressure conditions are quite distinctive, and indicate a period of bad weather.

They can be recognized by slow-moving or indeed imperceptible winds, and heavy, humid air. At this time you can smell wilderness odors more strongly, and you will also notice that sounds are sharper and carry further. If you spend much time outdoors you will soon come to recognize these signs and what they are telling you.

Conclusion:

No one can state with certainty what will happen in 2012, but there is a lot of compelling evidence that points towards a catastrophe of some kind, that could affect all of humanity.

Your choices are clear. You can sit on your couch, put your hands over your eyes, turn up the TV, and hope it doesn't happen.

Or you can engage your brain, engage your senses, and start to make decisions of your own.

If history has taught us one thing about disasters, it is that those who plan are those who survive. By thinking now about critical issues, you can put yourself far ahead of the curve, in among a select group who have actively done something to increase their chances of survival.

Think about issues like:

- Evacuation routes
- A safe haven
- Emergency supplies
- First aid training
- Wilderness skills
- Scenario visualization

We all fervently hope that nothing untoward does come to pass. We have families, children, friends, and we would like to see them all live long, happy lives.

But if 2012 does turn out to be a major turning point in human civilization, we aim to be prepared.

Will you be ready?

Survive and Stay Alive
Gordon Leon

