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## **#ENVIRONMENT**

## They Aren't Recyclable



e've all probably been guilty of this recycling no-no at least once, discarding a disposable coffee cup or food takeout container in our ing you're doing your part to help, your optimistic recycling may actually be hurting the process. Depending on where you live, there are some items that simply aren't recyclable, including varieties of paper, glass and plastic. Here's a list of items that generally are not recyclable, along with suggestions on how you can dispose or reuse them

**Hazardous Waste** 

**Household Glass** 

This includes household chem

icals, motor oil, antifreeze and

other liquid coolants. Motor oil

is recyclable, but it is usually

handled separately from

Window panes, mirror light

bulbs and tableware are

impractical to recycle.

Bottles and jars are usually

fine. Compact fluorescent

lightbulbs (CFLs) are recv-

clable, but contain a small

amount of mercury and

shouldn't be treated as com-

Sure, they're metal. But since spray cans also contain propel-

lants and chemicals, most municipal systems treat them as haz-

## **Batteries**

These are generally handled separately from both regular trash and curbside recycling. **Brightly Dyed Paper** 

Strong paper dyes work just white laundry.

**Ceramics and Pottery** This includes things such as coffee mugs. You may be able to use these in the garden.

It is not commercially feasible to reclaim the paper and plas-

Juice Boxes and Other

Some manufacturers have begun producing recyclable containers. The rest are not suitable for reprocessing including many disposable coffee cups from **Containers** your local coffee shop.

mon household bulbs



**Medical Waste** Syringes, tubing, scalpels and other phazards should be disposed as such

Napkins and Paper Towels **Discouraged** because of what they may have absorbed. Consider composting.

Plastic Bags and Plastic Wrap If possible, clean and reuse the bags.

## **Takeout Containers**

Plastic containers that contained food can't be recycled unless they are thoroughly rinsed out. Oily residue left on the containers makes them unrecyclable.

### that purpose) **Tyvek Shipping Envelopes**

**These** are the kind used by the post office and overnight delivery companies.



**Plastic-Coated** 

**Boxes, Plastic** 

**Dispose** off safely.

Styrofoam

**They** are the

most difficult



throwing that



Davide Castelyecchi any in the world woke to the news on 22 June that the United States had bombed nuclear sites in Iran, with the goal

> weapons. The raids targeted Iran's uranium-enrich ment facilities in Fordow and Natanz, and its nuclear research centre in Isfahan, using stealth bombers to drop massive 'bunker busters,' and cruise missiles.

of destroying the nation's ability to pro-

Although Iran says its nuclear programme is for peaceful purposes, experts have long assessed that Iran was close to having the capa bility of building nuclear weapons if it chose to do so. The US attacks followed a bombing campaign by How do you assess the impact of the bombings

on Iran's nuclear capabilities?

here aren't many researchers who are able to assess the impact of the bombings. We have decades of experience with the Iranian nuclear programme, so we know their facilities and activities very well. And we have great access to satellite imagery, which we have to buy. We try to buy some every day. And we utilize analysts who have decades of experience to analyze these images. We also have lots of contacts with governments, and we have colleagues who also have contacts with governments. A lot of the damage is

on the surface, so, it's a question of

knowing what the building did (in

terms of its role in the nuclear

program). We rely on our repository of information about the sites that are attacked. So, it's pretty straightforward. Obviously, more problematic is

the underground sites. When we initially assessed Israel's bombing of Natanz, three days later, I saw a very small crater above the underground hall. I could work out and link it to a type of Earth-penetrator weapon that Israel is known to have. It would leave a really small crater when it went in, and the damage would be underground The United States bombed it with a much more powerful Earth pen etrator. So, damage is probably more extensive

## How and when will we know for sure the extent of the damage?

s nuclear experts, we'd like A to see this done with diplomatic agreements, where Iran would allow intrusive inspections into its programme. If that does not happen, then, it's

the job of US and Israeli intelligence to assess the damage They're looking at communications intercepts, or trying to recruit people on the inside to reveal information.



# Did the US wipe out Iran's nuclear programme? Darya Dolzikova, Senior Research Fellow at London's Royal United Services Institute for Defence and Security Studies, points out that 'If Fordow was indeed seriously damaged in the latest round of strikes, which remains unclear, that would

certainly be a significant blow to Iran's ability to produce fissile material for a nuclear weapon. The Fordow Fuel Enrichment Plant (FFEP) has been key to Iran's nuclear programme, enriching uranium to 60%, more efficiently than at Natanz. Further attacks on Natanz and Isfahan, depending on the nature and extent of the damage, would have also helped set the program back further.' However, questions remain as to where Iran may be storing its already enriched stocks of HEU, as these will have almost certainly been moved to hardened and undisclosed locations, out of the way of potential Israeli or US strikes.

Israel, which has since carried out

further attacks on Iranian nuclear

facilities. On 23 June, the

International Atomic Energy

Agency reported that 'very signifi-

cant damage is expected to have

occurred' at the underground

Fordow site. Researchers at aca-

demic institutions and think tanks

are also assessing the potential

impacts of the attacks on Iran's

nuclear capabilities. Analysts have

said that the attacks probably set

the nuclear programme back sub-

stantially, but not permanently. In

particular. Iran could have moved

stockpiles of highly-enriched ura-

nium, and perhaps some enrich-

ment centrifuges, elsewhere.

David Albright, a nuclear policy

specialist and president of the

Institute for Science and

Washington DC, spoke to Nature

about what researchers know.

Security

International

## Would there be radioactive materials detected outside Natanz, Isfahan and Fordow if the attacks were successful?

o far, the IAEA reports no such leaks. And it appears that Iran had moved the enriched uranium stockpiles in the days before the bombings. The United States has said that the target of its bombings was the facilities. so, they understand they are not getting at the nuclear material. Reportedly, the B-2s dropped 14 GBU-57s on buried uranium-

enrichment sites at Natanz and especially Fordow, which Trump described as the 'primary' target. The Tomahawks struck Isfahan, a complex of facilities where Iran supposedly converts uranium metal into a gaseous compound and makes centrifuges to enrich the gas and store highly enriched uranium (HEU) for making bombs.

It may be noted that when uranium is mined, it is composed of two types of isotopes, Uranium-238 and Uranium-235. Uranium-238 makes up about

99.3% of the material, while Uranium-235 makes up .7%. Uranium-235 is key to making nuclear weapons, but since there are such small amounts of it in the material's natural state, scientists increase the percentage of Uranium-235 in the material and separate it from Uranium-238. This is what is known as enrich-

One only needs uranium to be enriched to about 3% to 5% for power plants (civilian use), but above 90% of this is needed for making nuclear weapons.

There are concerns that Iran could start making nuclear weapons grew, with the International Atomic Energy Agency (IAEA) suspecting that Iran has accumulated more than 400 kg (880 pounds) of uranium enriched to 60%, adequate for making ten bombs.

The IAEA reported on May 31 that Iran is in breach of the 2015 Joint Comprehensive Plan of Action it signed with several major countries, stating that it would not surpass the 3.67% uranium enrichment level limit.

It may also be noted that before June 22, Israel had already hit Natanz and Isfahan, and destroyed much of Iran's airdefence system, clearing the way for the Americans. But the site in Fordow, buried into a mountain. deep in about half a mile or 800 meters, was beyond the reach of Israeli bombs According to the Western

points out that 'If Fordow was indeed seriously damaged in the latest round of strikes, which remains unclear, that would certainly be a significant blow to Iran's ability to produce fissile material for a nuclear weapon. The Fordow Fuel Enrichment Plant (FFEP) has been key to

strategists, 'massive ordnance penetrator' (MOP) alone could back further have obliterated Fordow. These can burrow through 60 metres of as to where Iran may be storing

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vant activities.

than the FFEP."

out of the way of potential Israeli

that Tehran could use for contin-

ued centrifuge production,

enrichment, and weapons-rele-

It is also unclear what secret facilities may exist inside Iran

There is also currently no

information on the state of the

facility at Kolang Gaz La, not far

from Natanz, which has been

under construction inside a

In other words, if Iran has

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of uranium enriched to 60%, to a

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Enrichment Complex that is

Iran's largest nuclear enrichment

facility, experts agree that Israel's

attacks earlier last week probably

caused significant damage to the

centrifuges, if they had been in

operation at the time Israeli war-

planes knocked out the electrici-

The same may have been the

Though it is the Natanz

the latest U.S. strikes.

mountainside, reportedly deeper

n other words, if Iran has really moved or hidden the 400 kg of uranium enriched to 60%, to a secret place and quickly enriched them to above 90 per cent, the threshold required to manufacture an atomic bomb, the threat will continue, notwithstanding the latest U.S.

standard concrete, and repeatedly striking the same spot allows them to strike deeper. This was exactly what the Americans did by using B-2s and MOPs. President Trump has claimed

that all of Iran's nuclear infrastructure has been 'obliterated.' But experts have doubts. Reportedly. General Dan Caine, the Chairman of the Joint Chiefs of Staff, has been noticeably far less bullish in immediate

assessments of the results of Saturday's raids than the President or Defense Secretary Pete Hegseth Darya Dolzikova, Senior Research Fellow at London's Royal United Services Institute

for Defence and Security Studies, Iran's nuclear programme. enriching uranium to 60%, more efficiently than at Natanz. Further attacks on Natanz and Isfahan, depending on the nature and extent of the damage, would have also helped set the program

"However, questions remain

est of Iran's established nuclear research centres that has been operational since the early 1980s At least 3,000 scientists and engineers reportedly worked at the site, but there was no large-scale enrichment taking place at the facility, according to the IAEA officials. Of course, Iran has several other nuclear facilities spread across the country Still. the largest and most crucial are the Bushehr nuclear power plant and the Bandar Abbas uranium production plant. Explosions have been reported near Bushehr in recent weeks, but it is not clear if the facility has been directly hit by Israeli warplanes.

Western reports suggest that radiation levels have not jumped, indicating that Israel may have been seeking to damage the infrastructure around the plant rather than the nuclear reactor itself. Incidentally, on June 12 Mohammad Eslami, the head of

current regime continues to stay in power.



#WILD

## Why Coyotes and Badgers Hunt Together

The two predators were photographed collaborating in Colorado, a fascinating example of interspecies teamwork.

tion aren't mutually exclusive. Just ask a coyote or a badger. Both are crafty carnivores, and since they often hunt the same prev in the same prairies, it would make sense for them to be enemies, or at least to avoid each other. But while they don't always get along, coyotes and badgers also have an ancient arrangement that illustrates why it can be smart for rivals to work together. An example of that partnership

unfolded on a Northern Colorado prairie, near the National Blackfooted Ferret Conservation Center. And it was captured in photos, both by a wildlife camera trap and sharpeved photographers.

A field camera caught this amazing shot, which shows the covote and badger trotting across the landscape with a prairie dog looking on in the foreground. While capturing such good photos of a hunt like this is relatively rare, the phenomenon is well-documented. It

If one takes his claim seriously, then Iran's nuclear capacity, being obliterated, will always All told, as Dolzikova says,

Organization, had said that Iran

had completed the construction

of a third enrichment facility in a

structed and located in a secure.

invulnerable location," he said

according to the semi-official

Mehr News Agency. "As soon as

centrifuge installation and set-up

are complete, enrichment will

"The new site is fully con-

secret location.

"Besides the actual physical capabilities. Iran retains extensive expertise that will allow it to eventually reconstitute what aspects of the programme have been damaged or destroyed. The Iranian nuclear programme is decades old and draws on extensive Iranian indigenous expertise. The physical elimination of the programme's infrastructure, and even the assassination of Iranian scientists, will not be sufficient to destroy the latent knowledge that exists in the country." The point that, thus, emerges is that Iran's nuclear project has been much more extensive and dispersed than suspected to have and bombed by tively. As Nicholas Miller, a non-Dartmouth College in Hanover, New Hampshire, seems to suggest, unlike in Syria or, for that matter, Iraq, 'repeated intervention is required in Iran,' if the

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Americans long before Europeans reached the continent, and scientists have studied it for decades. Cross-species collaboration has been reported across much of Canada, the United States, and Mexico, typically with one badger nunting alongside one coyote. A

Mammology reports that researchers at the National Elk Refuge in Wyoming found that 90% of all coyote-badger hunts featured one of each animal while about 9% involved one badg er with two covotes. Just 1% saw a

### **A Mutually Beneficial Partnership**

ut why would these predators work together at all? When one of them finally catches something, they aren't known to share the spoils. So, what's the point? Working together helps each

species pursue prey more effectively. The point, apparently, is to improve the likelihood that at least one of the hunters will snag some prey. Even if one ends up empty-handed, the partnership seems to pay off for both species in the long run. Each member of the hunting

party has a distinct set of skills.



Coyotes are nimble and quick, so they excel at chasing prey across an open prairie. Badgers are slow and awkward runners by compar ison, but they're better diggers than covotes, having evolved to pursue small animals in underground burrow systems. So, when hunting prairie dogs or ground squirrels on their own, badgers usually dig them up, while coyotes chase and pounce. The rodents, therefore, use different strategies depending on which predator is after them. They often escape a digging badger by leaving their burrows to flee aboveground and evade covotes by running to their burrows.

"Covotes with badgers con sumed prey at higher rates and had an expanded habitat base and lower locomotion costs," according to the authors of the National Elk Refuge study. "Badgers with coyotes spent more time below ground and active, and probably had decreased locomotion and excavation costs. Overall, prey vulnerability appeared to increase when both carnivores hunted in partnership."

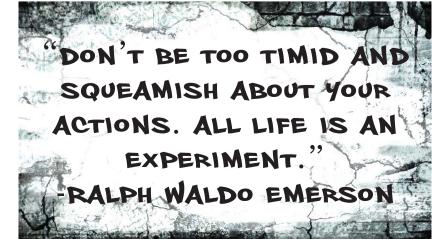


## **Not Always Partners**

adgers and coyotes aren't always friendly, though, While most of their interactions 'appear to be mutually beneficial or neutral, Ecology Online notes that they sometimes prev on each other. The two species have developed 'a sort of open relationship,' according to the U.S. Fish and Wildlife Service (FWS), since they tend to collaborate in warmer months and then drift apart as winter sets in.

"In the winter the badger can dig up hibernating prev as it sleeps in its burrow," the FWS explains, "I has no need for the fleet-footed cov ote." Not at the time, anyway. Bu winter eventually turns to spring and these two hunters may start to need each other again. And, just as they have for thousands of years. they'll make peace, embrace their differences, and return to work.

## THE WALL



## **BABY BLUES**



## ZITS







